

In this issue • • •

Special Report on

Hip Dysplasia

Page 791

Journal

OF THE
AMERICAN VETERINARY
MEDICAL ASSOCIATION



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Vol. 139

October 1, 1961

No. 7

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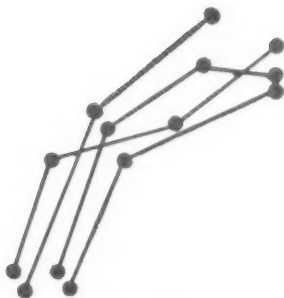
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References: 1. York, C. J.; Bittle, J. L.; Burch, G. R., and Jones, D. E.: Vet. Med. 55:30 (April) 1960. 2. York, C. J., and Burch, G. R.: J. Am. Vet. M. A. 138:298 (March 15) 1961.

^{*}Trademark for CANINE DISTEMPER VACCINE, Modified Live Virus, Chick Tissue Culture Origin, and INFECTIOUS CANINE HEPATITIS VACCINE, Modified Live Virus, Porcine Tissue Culture Origin, Combined, Vacuum Dried.

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Correspondence

British Report in Error on Hip Dysplasia

August 3, 1961

Dear Sir:

May I refer to the July 1, 1961, *J.A.V.M.A.* which contains an extract [quoted directly] from the Animal Health Trust 10th Report, London, England (1957-1960): 62, on the subject of hip dysplasia? Unfortunately, my name is linked with certain ambiguities and incorrect statements in the Report for which I was in no way responsible and I beg the courtesy of your columns to clarify the situation.

To say that hip dysplasia implies congenital dislocation of the hip only is quite incorrect and the paper referred to in the report¹ groups a number of conditions all of which involve abnormal development or growth of the canine hip joint. The conditions listed were: (a) subluxation of the femoral head, usually associated with acetabular dysplasia; (b) congenital dislocation of the femoral head; (c) Perthes' disease; (d) osteochondritic conditions; (e) slipped epiphysis. The last three conditions listed may be different manifestations of the same basic condition.

Whether or not these diseases are hereditary is immaterial to the definition of the term hip dysplasia although there is evidence that (a) and possibly (b) are so linked.^{2,3} In the light of present knowledge on the subject, it would be unwise to make any emphatic pronouncement regarding the hereditary aspects of conditions (c), (d), and (e) and no such statement appeared in the paper¹ referred to in the report. Another unfortunate error is the statement that my paper is the only one available on the subject. I need hardly point out to American readers that this is not so.

At present, the Canine Centre of the Animal Health Trust, together with other accepted authorities on hip dysplasia, are cooperating with breed societies in Britain, notably the Alsatian League of Great Britain, in an effort to eventually eradicate hip dysplasia. In addition, the British Veterinary Association has established recently a subcommittee to consider means of advancing the progress already made on a national scale.

In conclusion may I say that Mr. S. F. J. Hodgman, director of the Canine Centre, Animal Health Trust, is most concerned about the errors made in the A.H.T. report but the particular section involved was prepared for publication at a time when Mr. Hodgman was seriously indisposed.

Yours faithfully,
s/W. BRIAN SINGLETON, M.R.C.V.S.
London, England

¹Singleton, W. B.: Hip Dysplasia in the Dog. Proc. B.S.A.V.A. 1st Annual Congress (1958): 75.

²Schales, O.: Genetic Aspects of Dysplasia of the Hip Joint. North Am. Vet., 37, (1956): 476.

³Schales, O.: Hereditary Patterns in Dysplasia of the Hip. North Am. Vet., 38, (1957): 152.

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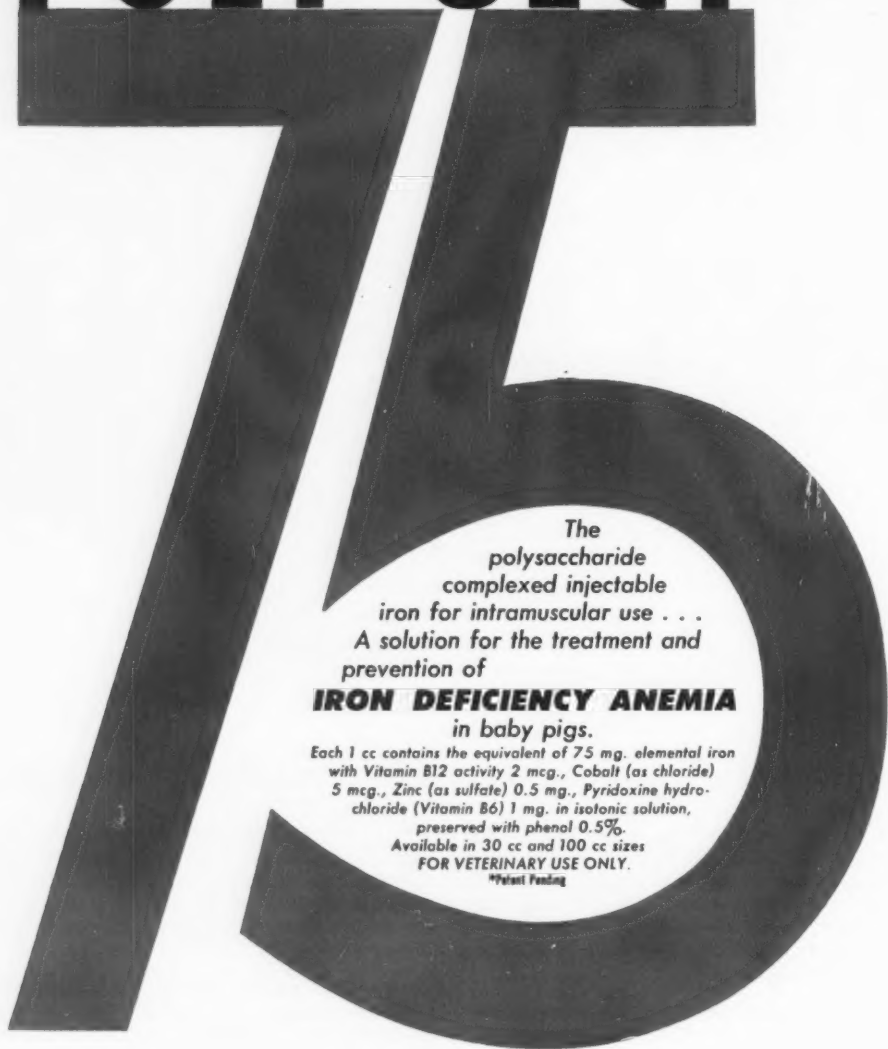


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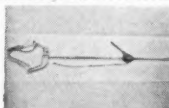
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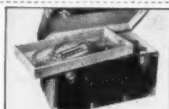
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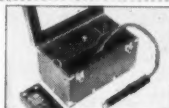
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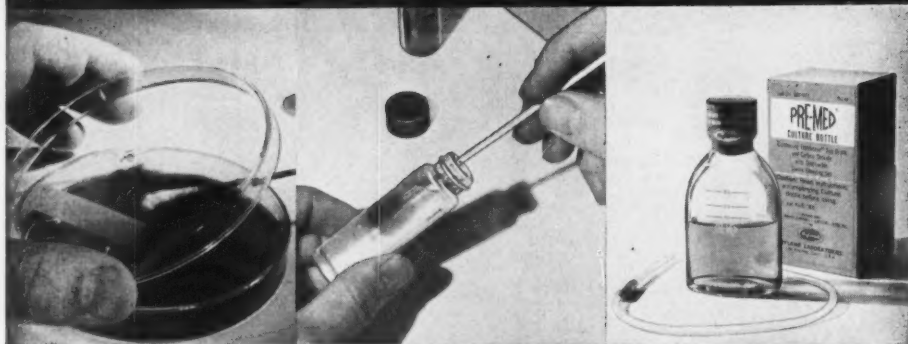
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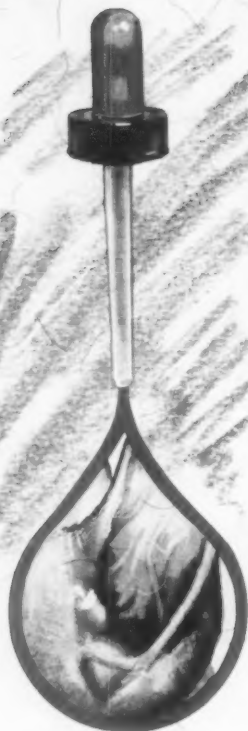
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J. A. McCallam, VMD
Brig. Gen. USA (Ret.)

MILITARY

Army Veterinary Officers

According to plans now being made for required additional Army veterinary officers (see JOURNAL, Sept. 15, 1961, p. 624), the first group will be processed for service in the fall of 1961, and subsequent groups will start duty in January and April, 1962. Unless a sufficient number of voluntary applications is received for appointment and active duty (in the grade of First Lieutenant only), it is probable that veterinarians will be drafted into the Army Veterinary Corps under the provisions of the Universal Military Training and Service Act as amended (doctor draft). Those veterinarians under 26 years of age who are engaged in endeavors considered least essential to the livestock industry and the nation's welfare will be called to duty first. The number to be drafted will depend, in part, on the number of volunteers applying in the immediate future.

Voluntary applicants should request the necessary forms and instructions from: Army Area Headquarters, area in which you reside, Attention: AMEDS Personnel Counselor, Surgeons Office. The correct address of an Army Area Headquarters may be obtained from any military office or post office.

Air Force Veterinary Service

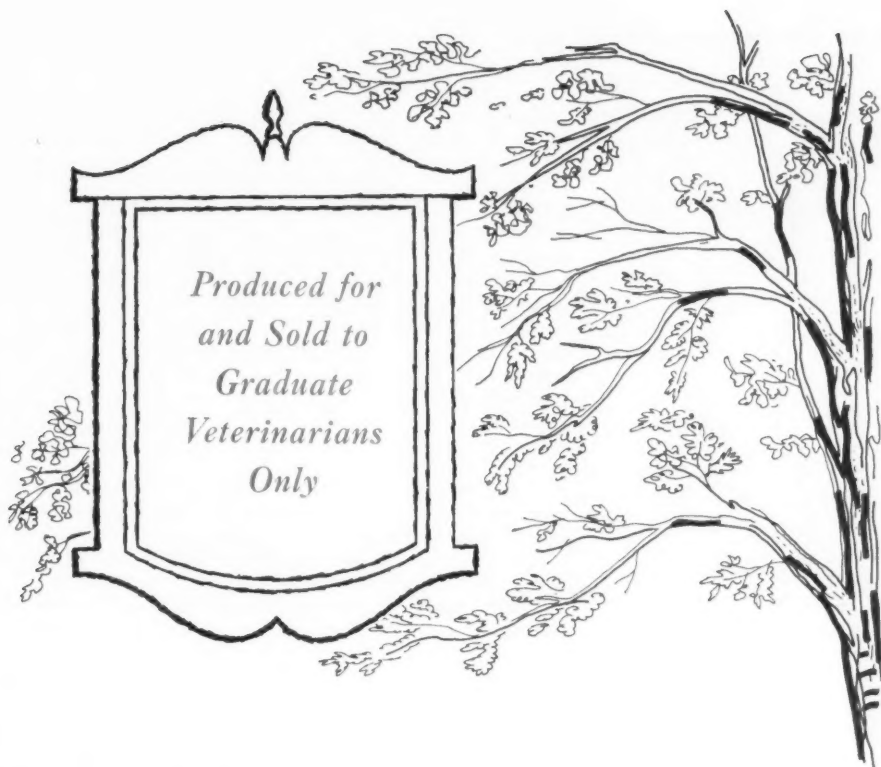
The Air Force Veterinary Service is still accepting voluntary applications from veterinarians for two years active duty in its expected expanding program. Applicants may apply to: Medical Procurement Branch, AFCSG 25.1 Office Surgeon General, Headquarters, U.S. Air Force, Washington 25, D.C.

MISCELLANEOUS

Hog Cholera Bill

H.R. 7176—Hog cholera eradication bill, passed the House without amendment, Aug. 28, 1961, by a record vote of 337 yeas to 3 nays. This passage subsequently was vacated, and the bill was tabled after S. 1908, a similar bill, was passed without amendment. Since S. 1908 had been passed by the Senate on Aug. 21, the measure was cleared for Presidential consideration (see JOURNAL, June 15, 1961, adv. p. 12, and p. 677; Sept. 1, 1961, p. 514).

(Continued on page 738)



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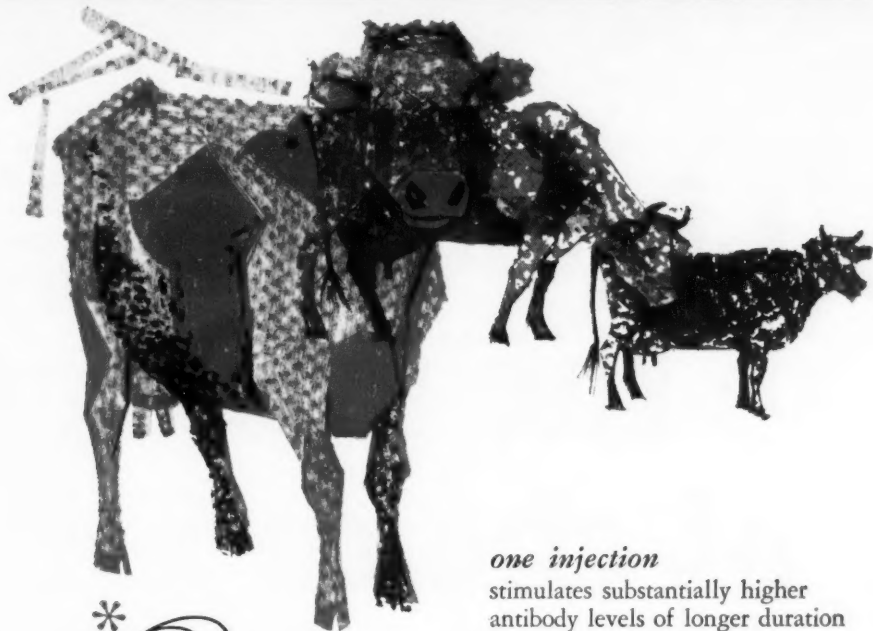
Grain Belt Supply Co.
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Pensions for Self-Employed

Senate Finance Committee, in executive session Aug. 25, 1961, favorably reported H.R. 10 (voluntary pension plans for self-employed) with an amendment in the nature of a substitute bill. A vote breakdown of the 17-member Committee is as follows: Affirmative (14)—Harry F. Byrd (D., Va.), Robert S. Kerr (D., Okla.), Russell Long (D., La.), George Smathers (D., Fla.), Clinton P. Anderson (D., N.M.), Herman Talmadge (D., Ga.), Vance Hartke (D., Ind.), J. Fulbright (D., Ark.), John Williams (R., Del.), Frank Carlson (R., Kan.), Wallace Bennett (R., Utah), John Butler (R., Md.), Carl T. Curtis (R., Neb.), Thruston B. Morton (R., Ky.); Negative (3)—Paul Douglas (D., Ill.), Albert Gore (D., Tenn.), Eugene J. McCarthy (D., Minn.).

H.R. 10, as approved by the Committee, is essentially the same as the legislation approved by the Committee in the 86th Congress. The major differences are: (1) It includes a modified version of the Long amendment—a self-employed person would be permitted to deduct 50% of the remaining \$1500 which may be contributed. (2) It does not include last year's provisions, which would restrict contributions or benefits under corporate-owner-manager type pension plans; inclusion of this in last year's Committee bill jeopardized the enactment of H.R. 10 by the 86th Congress. (3) It tentatively includes a provision permitting anyone not covered by a pension plan to purchase up to \$300.00 per year in tax-free government bonds for retirement purposes. Sen. Harry F. Byrd, chairman of the Senate Finance Committee, said that only 11 members of the Committee had voted on the amendment, six voting in the affirmative and five in the negative, and that the other members would be polled. This could result in the amendment being dropped from the bill.

H.R. 10 will not be reported to the Senate before Sept. 5, 1961. Sen. Douglas, Gore, and McCarthy have been given until that date to prepare their minority views for the Senate Finance Committee report. No Senate action on the bill is expected during this session. We recommend that state association secretaries and individual members in the 14 states whose Senators voted in the affirmative, write a note of appreciation to their Congressional friends.



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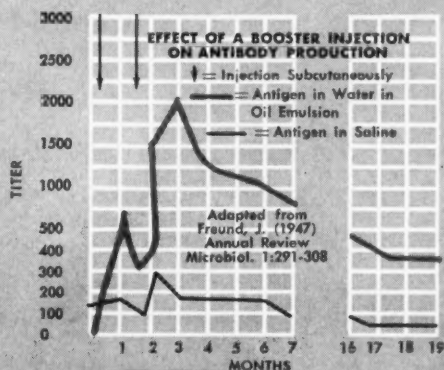
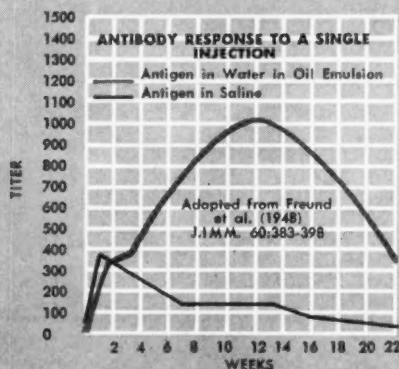
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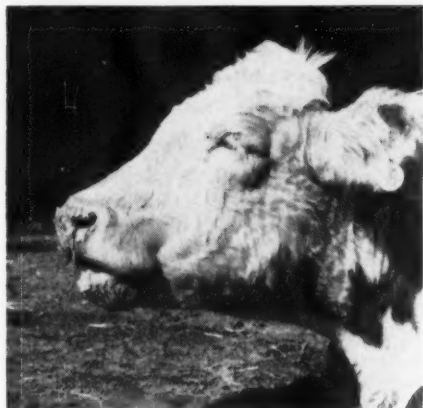
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1. Anderson, F. B.: Vet. Med. 54:535, 1959.

2. Lawson, K. F., et al.: Canad. J. Comp. Med. 22:164, 1958.

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Actions of Your House of Delegates

During the meetings of the AVMA House of Delegates, 24 resolutions came up for consideration. Here's a rundown on the actions taken by the House on these resolutions.

Resolutions 1, 2, and 3 were resolutions of appreciation to the Committee on Local Arrangements, the Michigan State V.M.A., the Committee on Program, the Convention and Visitors Bureau of Detroit, the hotels, the exhibitors, the auxiliaries, newspapers, magazines, radio, and television, and Allied Laboratories, Inc., for its sponsorship of the closed-circuit television programs. These resolutions were approved by the House.

Other resolutions approved by the House of Delegates were:

Resolution 4—calls for AVMA to request the USDA to review the level of fees for services rendered by private practitioners on USDA disease eradication programs.

Resolution 7—calls for AVMA, through its Section on Public Health and the Council on Public Health and Regulatory Veterinary Medicine, to encourage qualified veterinarians to affiliate with the American Public Health Association.

Resolution 8—states AVMA support of and willingness to participate in the fourth Pan American Congress to be held in Mexico City, November, 1962.

Resolution 9—calls for active AVMA support in the securing of sufficient appropriations to staff the international animal inspection and quarantine programs of the USDA, and to provide adequate, modern facilities for quarantine and inspection of animals entering the United States.

Resolution 11—states that the Association shall make known its opposition to the abolition of the assistant secretary of defense (health and medical) and urge that the U.S. Department of Defense restore this office to its former position.

Resolution 12—states AVMA approval of the biological products evaluation program at the National Animal Disease Laboratory.

Resolution 19—reiterates AVMA's desire to see a veterinary branch established within the International Cooperation Administration.

Resolution 21—states AVMA's opposition to the type of legislation requiring licensing of every scientist and certification of all

Opening Session of the 98th Annual AVMA Meeting, Detroit, Mich.



laboratories as represented by the Griffiths (H.R. 1937) and Moulder (H.R. 3556) bills.

Resolution 22—urges enactment of legislation to permit the Surgeon General, Public Health Service, to appoint a chief professional officer for veterinary medical affairs.

Resolution 23—calls for a study on the subject of indiscriminate sales of veterinary products.

Resolution 24—commends Senator Humphrey (Minn.) for his efforts in Congress to secure additional funds for the nation's veterinary colleges.

Resolutions not approved by the House of Delegates were:

Resolution 5—called for rescinding the voting rights of the National Association of Federal Veterinarians.

Resolution 6—urged the adoption of a new symbol as the insignia of the AVMA.

Resolution 13—requested AVMA financial support for construction of a simulated animal hospital to be exhibited at a health fair in Colorado.

Resolution 14—called for election of AVMA officers by mail ballot.

Resolution 15—asked for remuneration of AVMA presidents.

Resolution 16—requested executive board vote for AVMA vice-president as well as an increase in his responsibilities.

Resolution 17—limited delegates to two consecutive four-year terms.

Resolution 18—requested publication of the proceedings of the scientific sessions at annual meetings.

Resolution 20—asked for funds for an exhibit.

Resolution 10—calling for an increase in AVMA dues in the amount of \$10 to provide funds for the Research Fellowship Program, was amended to permit members to voluntarily contribute the amount to the AVMA Research Fund along with their dues payment.

Dr. Andy W. Crawford Elected Vice-President

Dr. Andy Crawford (KSU '30) was unanimously elected vice-president of the American Veterinary Medical Association at the 98th Annual Meeting in Detroit, Aug. 20-24, 1961.

Dr. Crawford, of Rolling Fork, Miss., has been an AVMA delegate from Mississippi for "longer than I can remember." He estimates that it's been about 12 to 16 years. He was president of the Mississippi State V.M.A. in 1935, and is a member of the Central Mississippi V.M.A. and of the Mississippi Cattlemen's Association. He is a Senior Active member of the Rotary Club in Mississippi, having been a member for over 30 years.



Dr. Andy W. Crawford

After graduation from veterinary college, Dr. Crawford worked with the Mississippi Livestock Sanitary Board for six months. He then went to Newark, N.J., where he worked in meat inspection with the Bureau of Animal Industry for 1½ years. In 1933 he set up a general practice in Rolling Fork.

From 1940 to 1945 he was in the U.S. Army Veterinary Corps as port veterinarian in New Orleans. He returned to Rolling Fork in 1945.

Dr. Crawford was sent to Greece as a U.S. representative in 1946 where he presented two shiploads of cattle (1,500 head) to the government there as part of a U.S. assistance program to rebuild the cattle population in Greece.

He returned to Rolling Fork where in 1947 he was elected sheriff of Sharkey County. He was re-elected sheriff four years later. His brother, Dr. C. D. Crawford (KCV '17) had preceded him as sheriff.

Dr. Crawford will serve as AVMA vice-president until the Miami Beach convention in August, 1962.



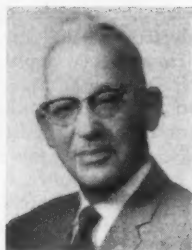
Dr. H. S. Cameron



Dr. Frank Kral



Dr. J. T. McGrath



Dr. F. B. Young



Dr. J. L. McAuliff

AVMA 1961 Award Winners Named

Five awards were presented at the opening session of the AVMA 98th Annual Meeting, August 21, in Detroit. The awards and their recipients are listed below:

Borden Award

For his outstanding contributions to dairy cattle disease control, Dr. Hugh S. Cameron (COR '31) was selected the winner of the 1961 Borden Award. He received a gold medal and \$1,000.

Of 70 papers published by Dr. Cameron, 40 concern the genus *Brucella* or the disease brucellosis. While his researches have emphasized the fundamental, he also has shown an appreciation of applied research which is indicated by his development of the whey test for brucellosis. Dr. Cameron was the recipient of a Fulbright award as a research scholar in 1959-60. During this period he continued his investigation on brucellosis in New Zealand.

The first Borden Award in veterinary science was presented to Dr. I Forest Hudson in 1944. The Borden Awards were established by the Borden Company Foundation in 1936 to recognize and encourage outstanding research achievements in the United States and Canada in the fields of

chemistry, biochemistry, human nutrition, animal physiology and genetics, dairy production and manufacture, pediatrics, and related sciences. Currently, eight national associations administer the awards and medal in their respective fields.

XII International Veterinary Congress Prize

Dr. Frank Kral (VI '14) was selected as the winner of the 1961 Twelfth International Veterinary Congress Prize. The prize, which consists of a certificate and cash award of \$225, is given for outstanding service by a member of the AVMA to veterinary science and the veterinary profession.

In February, 1949, Dr. Kral came to the United States and was appointed associate in veterinary medicine at the School of Veterinary Medicine, University of Pennsylvania, and was made professor in 1956. Since 1952 he has been a part-time lecturer in the Graduate School of Medicine at the University. Dr. Kral is an authority in animal dermatology, and has given innumerable lectures on the subject in all parts of the country. He has been dedicated to instructing veterinarians in the improvement of diagnosis and treatment of dermatologic con-

ditions in both small and large animals.

The prize was established in 1936 through a grant of unexpended funds raised for the entertainment of delegates to the Twelfth International Veterinary Congress in New York in 1934.

Gaines Award and Medal

Dr. John T. McGrath (UP '43) was the 1961 winner of the annual Gaines Award and medal. The award of a gold medal and \$1,000 was established in 1957 to be given to the veterinarian whose work in clinical research or the basic sciences within the preceding five years is judged to have contributed significantly to the advancement of small animal medicine and surgery.

Dr. McGrath is known in the field of veterinary pathology and is a pioneer in the study of neuropathology of domestic animals. His book, *"The Neurological Examination of the Dog,"* now in its second edition, has become a standard reference text for students, practitioners, and research workers in this field.

Dr. McGrath is professor of pathology at the School of Veterinary Medicine, University of Pennsylvania, and interim chairman of the Department of Veterinary Biology at the school. He is also professor of pathology in the Graduate School of Arts and Sciences and in the Graduate School of Medicine, and is attending veterinarian at the Philadelphia General Hospital.

AVMA Award

For meritorious service to the membership Dr. Frank B. Young (KSU '19) was selected to receive the 1961 AVMA Award. Dr. Young received a certificate and gold medal.

He was appointed chairman of the AVMA Special Committee on Veterinary Supply Problems and served on that committee from 1954 to 1957. In 1955 he was elected to a five-year term on the AVMA Executive Board, representing District V (Iowa and Minnesota).

Dr. Young established a large animal practice in Waukeg, Iowa, in 1919. He has missed only one state convention since that time. In 1949 he was appointed secretary-treasurer of the Iowa V.M.A., a position he held until his retirement in 1961. He participated in the Iowa Interprofessional Association to bring cooperation and understanding between the various professions, and helped organize the

first meeting of the Veterinary Nutritionists and Midwest Feed Manufacturers Conference.

Practitioner Research Award

The Practitioner Research Award was established in 1955 at the suggestion of the AVMA Council on Research to recognize research work by a practitioner who has carried out the major portion of an important phase of a research problem and has published the results while actually engaged in practice. Dr. John L. McAuliff (COR '18) was selected as the 1961 winner of this award. He received a plaque.

Dr. McAuliff, who maintains a practice in Cortland, N.Y., has published the results of his research both in the fields of bovine mastitis and the shipping fever-pneumonia complex of cattle. However, his greatest contribution to clinical research has been the time and clinical material he has given to people at veterinary institutions and research laboratories, requesting only that the answers found through this research be brought back to the practitioner in the field.

Two New AVMA Honorary Members Elected

Two AVMA honorary memberships were awarded by the House of Delegates during the 98th annual convention in Detroit, August 20-24. The new honorary members are Carl F. Huffman, Ph.D., recently retired Michigan State University faculty member, and Leroy E. Burney, M.D., former Surgeon General of the United States Public Health Service.

Dr. Carl Huffman was awarded an AVMA honorary membership in recognition of his outstanding service to the dairy industry and helpful attitude to veterinary problems and veterinarians.

Dr. Huffman received a fellowship in dairy husbandry at the University of Minnesota and earned his Ph.D. degree at the University of Wisconsin. He joined the staff of Michigan State University in 1922 and was retired in June 1961. He is the author and coauthor of over 130 scientific publications; has spoken to many veterinary groups, and has participated twice in AVMA annual meetings.

Dr. Huffman has received many honors for outstanding research in dairy cattle nutrition. In 1937 he was winner of the first Borden Award; in 1946 the Michigan State



Dr. Carl H. Huffman

Chapter of Sigma Xi award; in 1954, the award of the American Feed Manufacturers Association; and in 1958, a fellowship in the American Society of Animal Production. In 1958, he became president of the American Dairy Science Association, and in 1961 he was named by the association for its top tribute — the "Award of Honor" for outstanding service to the dairy industry and the American Dairy Science Association.

Dr. Leroy E. Burney was awarded an AVMA honorary membership in recognition of his contributions to medicine and veterinary public health. Dr. Burney has been a strong supporter of veterinary public health during his term of office, from 1956 to 1961, when he was Surgeon General of the U.S. Public Health Service.

During that period, the number of veterinary officers in the Public Health Service increased notably, and their skills and services have been applied in many new areas of public health research.

While he was serving as Indiana State Health officer from 1948 to 1954, he was one of the first of the country's state health commissioners to inaugurate a state-wide veterinary public health program, and has been honored by the Indiana V.M.A. for his contributions to public health.

Since retiring from the Public Health Service, he has been serving as special consultant to the director general of the World



Dr. Leroy E. Burney

Health Organization in Geneva, Switzerland, and has recently accepted the vice-presidency for medical affairs at Temple University in Philadelphia.

Dr. Burney received his M.D. degree in 1930 from Indiana University and his M.S. degree in public health from John Hopkins University in 1932.

Dr. J. O. Knowles Elected Chairman of AVMA Executive Board

Dr. Jack O. Knowles (UP '38), Miami, Fla., was elected chairman of the AVMA Executive Board for 1961-1962. He was also chairman of the Board for the 1960-1961 term.

Dr. Knowles was elected to the Executive Board representing District III in 1959. His term will expire in 1965. Dr. Knowles has served the AVMA as a delegate from Florida for eight years and as a member of the Advisory Committee to the House of Delegates from 1958 to 1959. He was chairman of the Section on Small Animals at the AVMA Convention in Minneapolis in 1955.

During World War II he served as an Air Force Veterinarian, and after he was discharged with the rank of Major, he went into private practice in Miami with his father, the late Dr. A. T. Knowles, and brother, Dr. R. P. Knowles. He was presi-

dent of the South Florida V.M.A. in 1955.

In addition to his AVMA activities, Dr. Knowles is a member of the American Animal Hospital Association, and the New York Academy of Science, and has been on the executive committee and the examinations committee of the National Board of Veterinary Medical Examiners.

New AVMA Council Members Elected

Positions on six AVMA councils were filled by the election of 11 new council members by the AVMA House of Delegates August 20 in Detroit.

The new council members are:

Council on Education—(Large Animal Representative) Dr. Herbert L. Marsh (ISU '43), Princeton, Ill. Dr. Marsh was re-elected to serve on the council. He is a general practitioner, and a member of his local and district veterinary medical associations, the Illinois V.M.A., and the AVMA.

Representing public health on the AVMA Council on Education will be Dr. Martin P. Hines (OSU '46). He is chief of the Veterinary Public Health Section of the North Carolina State Board of Health and visiting associate professor of the School of Public Health, University of North Carolina. Dr. Hines, who lives in Raleigh, is a Major in the Army Veterinary Corps Reserve, editor of the *North Carolina Veterinarian*, a diplomate of the American Board of Veterinary Public Health, a member of the Advisory Committee to the American Medical Association's Council on Rural Health representing the AVMA, and a delegate to the AVMA House of Delegates.

Judicial Council—Dr. C. M. Rodgers (OSU '34), Blandinsville, Ill., was elected to serve on the AVMA Judicial Council. Dr. Rodgers, who was vice-president of the AVMA for 1960 to 1961, is a general practitioner. He is a member of the American Association for the Advancement of Science.

Council on Research—Dr. R. L. Kitchell (ISU '43), St. Paul, Minn., was elected as a member of the Council on Research.

Dr. Kitchell is professor and head of the Division of Veterinary Anatomy and assistant dean of the College of Veterinary Medicine, University of Minnesota.

Dr. John T. McGrath (UP '43), was also elected to the AVMA Council on Research. Dr. McGrath, of Drexel Hill, Pa., is professor of pathology at the School of Veterinary Medicine, University of Pennsylvania. He has special training in animal pathology and neurology.

Council on Biological and Therapeutic Agents—Dr. Clyde F. Cairy (ISU '36), was re-elected as a member of the AVMA Council on Biological and Therapeutic Agents. Dr. Cairy is professor of physiology and pharmacology at Michigan State University. He lives in East Lansing.

Dr. James H. Gillespie, Ithaca, N.Y., is a newly elected member of the Council on Biological and Therapeutic Agents. Dr. Gillespie (UP '39) is professor of veterinary bacteriology at the New York State Veterinary College, Cornell University. He is also assistant director of the Veterinary Virus Research Institute there.

Council on Public Health and Regulatory Veterinary Medicine—Dr. Arthur G. Boyd (MCK '18), Sacramento, Calif., has been elected to the AVMA Council on Public Health and Regulatory Veterinary Medicine. Dr. Boyd is assistant director of the California State Department of Agriculture. He received special training in bacteriology from the University of Chicago, in pathology and serology at the Michigan Agricultural College, and in virus-serum control at the USDA.

Dr. Harvey Ellis (TEX '28), was elected as a council member of the AVMA Council on Public Health and Regulatory Veterinary Medicine. Dr. Ellis is Public Health Veterinarian and Liaison Officer in Civil Defense with the Arkansas State Health Department. He was president of the Arkansas VMA in 1959 and was awarded the citation as Arkansas Veterinarian of the Year in 1959.

Council on Veterinary Service—Dr. F. T. Candlin (COL '44), Denver, Colo., a small animal practitioner, has been re-elected to serve on the AVMA Council on Veterinary Service.

Dr. Harry J. Magrane (TEX '43), Mishawaka, Ind., is a newly elected member of the Council on Veterinary Service. Dr. Magrane is a small animal practitioner and a member of the executive board of the Indiana Veterinary Medical Association. He is a past president of the Michiana V.M.A., and immediate past president of the Indiana V.M.A.

AVMA Convention Attendance Reported

A total of 3,266 people registered at Cobo Hall in Detroit for the Ninety-Eighth Annual AVMA Convention.

Official Registration Figures:

Veterinarians	1,778	54.4%
Women	576	17.6%
Children	393	12.1%
Exhibitor representatives	345	10.6%
Students	88	2.7%
Other	81	2.6%
Total	3,266	100.0%

The five states with the highest number of registrants were: Michigan, 570; Ohio, 266; Illinois, 256; Indiana, 179; and New York, 172.

Geographic distribution of registrants at the Detroit meeting August 20-24, 1961.

Alabama	32	Nebraska	38
Alaska	1	Nevada	4
Arizona	11	New Hampshire	4
Arkansas	2	New Jersey	79
California	87	New Mexico	11
Colorado	53	New York	172
Connecticut	29	North Carolina	20
Delaware	8	North Dakota	15
District of Columbia	47	Ohio	267
Florida	44	Oklahoma	40
Georgia	36	Oregon	12
Hawaii	2	Pennsylvania	139
Idaho	15	Rhode Island	4
Illinois	256	South Carolina	8
Indiana	279	South Dakota	15
Iowa	245	Tennessee	16
Kansas	64	Texas	71
Kentucky	44	Utah	11
Louisiana	16	Vermont	2
Maine	15	Virginia	45
Maryland	83	Washington	16
Massachusetts	31	West Virginia	14
Michigan	570	Wisconsin	144
Minnesota	83	Wyoming	5
Mississippi	15	Canada	100
Missouri	102	Foreign	40
Montana	4	Total	3,266

Increased Voting Power of Delegates Approved

The AVMA House of Delegates has approved an amendment to the AVMA Bylaws providing for increased voting power for delegates.

Previously, voting power, which is based on active AVMA members within the constituent association, was restricted to a maximum of seven votes. The new amendment calls for an increase of voting strength

for every 150 members in constituent groups.

The section on voting power in the House of Delegates now reads:

"Each delegate representing a constituent association (other than the National Association of Federal Veterinarians) shall have the vote determined as follows:

50 active Association members or less	1 vote
51-150 active Association members	2 votes
151-300 active Association members	3 votes
301-450 active Association members	4 votes
451-600 active Association members	5 votes
601-750 active Association members	6 votes
751-900 active Association members	7 votes
901-1050 active Association members	8 votes
1051-1200 active Association members	9 votes
1201-1350 active Association members	10 votes
1351-1500 active Association members	11 votes

"Should the active members residing in the area of a constituent association exceed 1,500, the vote shall be increased by one vote for each additional 150 members. The number of active members shall be determined on a current basis from the records of the Association and shall be certified by the executive secretary 30 days before the annual meeting of the House of Delegates. Delegates representing other groups of veterinarians granted representation and the National Association of Federal Veterinarians shall have two votes. An alternate delegate shall vote only in the absence of the delegate for whom he is the alternate."

New Method of Electing AVMA Officers Adopted

A proposed amendment to the AVMA Bylaws calling for the election of AVMA officers by the House of Delegates was approved by the delegates in Detroit as being the "most democratic" election method.

After a great deal of discussion on the

floor of the House, the delegates decided that delegates, the elected representatives of constituent associations, should be responsible for electing AVMA officers.

The Association Bylaws on the matter of elections now read:

"The president-elect, the vice-president and, when necessary, the president, shall be elected by the House of Delegates at each annual meeting of the House beginning with the annual meeting in 1962. All elections shall be by ballot under the supervision of a board of tellers appointed by the president-elect from the delegates and ex officio members of the House of Delegates. A majority of the votes cast shall be necessary to elect. In case no nominee receives a majority of the votes cast, the nominee receiving the lowest number of votes shall be eliminated and a new ballot taken."

A resolution calling for mail ballot election of AVMA officers was tabled by the House.

Dues Raise Voted Down

A resolution calling for a \$10 increase in AVMA dues to provide additional funds for the AVMA Research Fund was amended by the House of Delegates to make the \$10 a voluntary contribution.

The House voted down an actual dues increase, but said that dues payment cards should be set up to make it possible for

members to contribute extra money to the Research Fund on a voluntary basis at the time of dues payment.

They said they hoped the voluntary plan would draw enough response from the AVMA membership to adequately support the AVMA Research Fellowship program.

AVMA Newsletter Planned

An AVMA Newsletter, to be mailed at first monthly and later bi-monthly to secretaries of constituent associations, has been approved by the AVMA House of Delegates.

The Newsletter, a project of the Department of Public Information, will carry latest AVMA news. It will be written so that excerpts can easily be selected for use in constituent publications.

It is hoped that the Newsletter will serve as a vehicle for speeding up and improving the flow of information from AVMA to constituent associations and the membership.

National Board of Veterinary Medical Examiners Representatives Elected

The AVMA House of Delegates has elected three veterinarians to represent the Association on the National Board of Veterinary Medical Examiners.

Exhibit area having final touches checked before the doors are opened for the 98th Annual AVMA Convention.



They are: Drs. K. O. Lassen (KSU '36), Phoenix, Ariz.; John B. Carricaburu (COL '44), Santa Ynez, Calif.; and A. G. Madden (OSU '34), Madeira, Ohio.

House Changes Structure of AVMA Sections

The AVMA now has sections on large animals, poultry, public health, research, regulatory veterinary medicine, and small animals.

An amendment to the Association's Bylaws adopted by the House of Delegates calls for the establishment of a separate section on regulatory veterinary medicine. Regulatory veterinary medicine and public health were previously one section.

The Bylaws continue to stipulate that "Each section shall have a chairman and secretary chosen by the president from a list of nominations submitted by the members attending the initial section meeting or, in lieu of such nominations, by direct appointment."

New Members Elected to House Advisory Committee

Two new members were elected to the Advisory Committee of the House of Delegates at the 98th annual meeting Aug. 20 to 24, 1961, in Detroit. They are: Dr. William T. Oglesby (ISU '31), Baton Rouge, La., representing teaching and research; and Dr. John L. O'Harra (ISU '43), Reno, Nev., representing state and federal regulatory veterinary agencies.

Dr. A. G. Misener (ONT '38), Chicago, Ill., representing small animal practitioners, was re-elected to the Advisory Committee.

AVMA Affiliate Membership Qualifications Extended

AVMA affiliate membership qualifications have been extended to include "persons engaged in veterinary research." The

addition was approved by the House of Delegates in Detroit Aug. 20, 1961.

The affiliate members clause in the Bylaws now reads:

"Teachers of veterinary medicine or of the sciences allied to veterinary medicine, and persons engaged in veterinary research, who do not qualify for admission as active members and who are citizens of the United States or Canada, may become affiliate members of the Association on nomination by the House of Delegates. Affiliate members shall have the same rights as active members except that no affiliate member may hold office or vote on any matter."

AVMA Adds to Honor Roll Membership List

Seventeen veterinarians who have been AVMA members for 50 years were placed on the Association's honor roll at the annual meeting in Detroit.

On hand to personally acknowledge the honor was Dr. William Madson (CVC '11). Dr. Madson, 78, has also been a member of the Wisconsin State V.M.A. for 50 years. He lives in Appleton where he set up his general practice immediately after his grad-



Dr. William Madson (left) accepts a certificate in honor of his 50 years membership in the AVMA from Dr. M. L. Morris.

uation from veterinary college. In 1937 he organized the Northeastern Wisconsin V.M.A., and he has been its secretary since that time.

Dr. Madson was active in his practice

and also did some state and federal meat inspection until 11 years ago when he had a heart attack. Since that time he has been practicing on a limited basis.

In accepting the honor he recalled the days when every veterinarian was an equine practitioner. "It was quite rugged to practice under the conditions existing 50 years ago, when I started out," he said.

Other veterinarians who became honor roll members of the AVMA but did not attend the meeting are: Drs. Herbert Anderson, Dickinson, N. Dak.; William G. Brock, Dallas, Texas; J. E. Crawford, Far Rockaway, Long Island, N.Y.; Robert Graham, Urbana, Ill.; G. H. Coon, San Francisco, Calif.; Karl F. Meyer, San Francisco, Calif.; Clyde B. Outhier, Salinas, Calif.; John C. Pace, El Centro, Calif.; W. H. Paxson, Goldsboro, Md.; W. J. C. Ramsay, Watsonville, Calif.; M. D. Rentschler, Punxsutawney, Pa.; Chester A. Roig, Poughkeepsie, N.Y.; A. F. Schalk, Hamilton, Ohio; R. E. Shigley, Minot, N. Dak.; Morgan J. Smead, Rochester, Mich.; and E. J. Wills, Harrisonburg, Va.

Dr. Arburua Loses Fight to Change Caduceus



Dr. Joseph Arburua is shown as he appeared before the House of Delegates during the convention to urge that the Association adopt the knotty rod of Aesculapius entwined by a single serpent (left) as its official insignia rather than the winged wand of Mercury encircled by two serpents. Dr. Arburua has been trying for many years to have the Association adopt the symbol of Aesculapius as its official symbol because he believes it to be more appropriate. The House of Delegates voted at its meeting to maintain the Association's present insignia.

Kentucky Veterinarians Win AVMA Golf Tournament

Drs. Robert E. Lee (MSU '50), Lexington, Ky., and R. W. Hammermeister (OSU '38), Flemingsburg, Ky., were low-score two-some in the Annual AVMA Golf Tournament, played at Detroit's Dearborn Country Club during the recent convention.

Drs. L. Brissenden (ONT '51), Random Lake, Wis., and L. T. Boley (KSU '49), Kewanee, Ill., were tied with a score of 79, for the Stader-Glenney Bowl.

The AVMA golf trophy won by Drs. Lee and Hammermeister is a traveling trophy that goes from state to state with the two-man team from the same state who win it each year. Last year the trophy went to Minnesota with Drs. Robert M. Stader and E. J. Kohler.

The Stader-Glenney Bowl, awarded to the golfer with the lowest gross score, is an honor to receive to be sure. However, the winner pays for the honor, because he customarily fills the bowl with champagne.

Dr. W. K. Wearly Accepts Ohio State Post

Dr. W. Keith Wearly (OSU '50) assumed the position of associate professor of veterinary medicine at the Ohio State University College of Veterinary Medicine, July 1, 1961. He has been in practice with Dr. P. A. Soldner (OSU '38) in Springfield, Ohio, since June, 1950.

Dr. Wearly has been serving as president of the Miami Valley Veterinary Medical Association and is a member of the executive committee of the Ohio V.M.A. He is also a member of the AVMA and the American Association of Equine Practitioners.

Viruses Studied at Colorado State University Symposium

Viruses and virus diseases were explored by research scientists, university and college instructors, and graduate students recently on the Colorado State University campus at a symposium entitled "Nuclear-Cytoplasmic Relationships."

Symposium participants discussed the chemical structure of minute parts of body cells and the relationship between those parts and viruses. The purpose was to obtain a better understanding of how virus diseases propagate, how they may be prevented, and how they enter and leave the cells.

Directors of the program, co-sponsored by the Colorado State University Research Foundation and the National Science Foundation, were Drs. G. P. Epling (COL '42) and T. L. Chow (MSU '40) of the University's College of Veterinary Medicine faculty. The conference attracted participants from throughout the United States and Canada and such distant points as India, Thailand, and Formosa.

Developments in this study of molecular biology have recently become so important to health science that the U.S. government has asked the National Institutes of Health to conduct a special program in the field.

International Review of Rabies Research Held in Paris

Members of the World Health Organization's Expert Committee on Rabies attended a meeting of rabies research workers in Paris, May 9 to 13, 1961.

The purpose of the meeting, convened by

WHO at the Pasteur Institute, was to provide an opportunity for a free exchange of information on rabies research; to define major unsolved problems in the field of rabies and suggest possible solutions; and to examine the results of WHO coordinated research on rabies and plan future collaborative efforts.

Topics discussed at the meeting were: pathogenesis of rabies, ecological and wildlife studies, fluorescent antibody techniques, antirabies immunization of human beings, potency tests of rabies vaccines, and local treatment of wounds.

American veterinarians who attended the meeting are: Drs. Ernest S. Tierkel (UP '42); Donald Dean (COR '41); Martin M. Kaplan (UP '40); and Ervin Eichhorn (UP '35).

Iowa State University Faculty Additions Announced

Iowa State University has announced that ten veterinarians have been added to the faculty of the College of Veterinary Medicine.

They are: Department of Anatomy—Bernard H. Skold (COL '42), assistant professor; James H. Magilton (ISU '46), assistant pro-



Rabies research review participants are (seated left to right): Ernest S. Tierkel, V.M.D., Atlanta, Ga.; Martin M. Kaplan, V.M.D., Geneva, Switzerland; Pierre Lepine, M.D., Paris, France; Harold Johnson, M.D., Berkeley, Calif. Standing (left to right) are: K. Yoshino, M.D., Yokohama, Japan; Robert Schindler, D.V.M., Hamburg, Germany; Hilary Koprowski, M.D., Philadelphia, Pa.; Karl Habel, M.D., Bethesda, Md.; Donald Dean, D.V.M., Albany, N.Y.; Erwin Eichhorn, V.M.D., Rome, Italy; and Pascu Atanasiu, M.D., Paris, France. N. Veeraghavan, M.D., Coonoor, India, was not present when the picture was taken.

fessor; Charles M. Sheldon (ISU '56), instructor; and John F. Munnell (UP '56), instructor. Diagnostic Laboratory—George S. Firkins (ISU '55), instructor, and John D. Baker (ISU '52), instructor. Department of Hygiene—John B. Gratzek (MIN '56), assistant professor, and Merlin L. Kaerberle (ILL '54), assistant professor. Department of Medicine and Surgery—William H. Cusick (ISU '61), instructor, and Raymond F. Sis (KSU '57), instructor.

University of Georgia Makes Faculty Changes

The School of Veterinary Medicine of the University of Georgia has added five veterinarians to its faculty since January, 1961.

They are: Drs. James R. Allen (GA '55), assistant professor of pathology and parasitology; Douglas R. Burley (ONT '38), associate professor of medicine and surgery; James M. Kling (GA '59), assistant professor of anatomy and histology; Eugene Papp (BUD '43), associate professor of pathology and parasitology; and Leland D. Schwartz (OKL '53), instructor of microbiology and preventive medicine (poultry).

Promotions given since January, 1961, went to Dr. Walter Kornfeld, now associate professor of physiology and pharmacology, and Dr. John D. Morton (ISU '33), now professor and head, Department of Medicine and Surgery.

Dr. Adrian M. Mills (COR '20) retired in June, and Dr. Gordon L. Foy (GA '32) left the faculty to return to private practice.

Grant for Study of Demodectic Mange Awarded Purdue

A three year research grant of \$34,000 for the study of "Factors Affecting the Development of *Demodex Sp.*" has been awarded Dr. S. M. Gaafar (CAL '44), associate professor of veterinary parasitology, Purdue University School of Veterinary Science and Medicine.

The grant was made by the National Institutes of Health to support the program which had been under investigation for the

past five years. It will support graduate studies on developing techniques for maintaining the mites in the laboratory as well as providing additional information on their needs and life cycle. These studies would also provide means for screening drugs used in the treatment of mange in animals and devising new programs for the control of skin diseases. The study will also include investigation of the effect of hormone imbalances on the development of the mites and the course of the skin disease.

Associated with Dr. Gaafar in these studies is Dr. John H. Greve (MSU '58), instructor of veterinary parasitology at Purdue University.

Nebraskan to Lecture on SPF Swine Program in Great Britain

A University of Nebraska scientist will spend six weeks lecturing in Great Britain on the SPF swine program.

Mr. Norman Underdahl, associate professor of veterinary science at the University's College of Agriculture and an AVMA affiliate member, will make his first appearance at Oxford, England. He has been associated with Dr. George A. Young (COR '43), chairman of the University's veterinary science department, in development of swine hysterectomy techniques in the laboratory. These proved to be the key to the SPF repopulation and accreditation program which is causing intense interest in swine-raising and breeding circles throughout the United States.

Professor Underdahl was invited to visit the British Isles and conduct a lecture tour by the Pig Industry Development Authority, a federation of British swine interests organized to promote the industry and encourage swine research.

At Oxford, he will attend the annual United Kingdom Veterinary Congress. He will also visit Rowett Institute at Aberdeen, Scotland; the National Institute of Research and Dairying at Reading; and the Veterinary Research Centre at Weybridge, all of which are government research stations.

He will deliver a series of lectures and participate in seminars at veterinary schools connected with universities at London, Bristol, Liverpool, and Cambridge, England, and Edinburgh and Glasgow, Scotland.

Mr. Underdahl's series of lectures will include five major topics: (1) history of the development of successful laboratory techniques for performing swine hysterectomies, methods employed, and reasons for observing certain procedures; (2) techniques in operating an SPF laboratory and a discussion regarding guidelines which both college and commercial laboratories must observe to ensure a successful operation; (3) discussion of performance records of SPF herds on Nebraska farms covering three years and a breakdown of individual herd records; (4) the SPF accreditation program as it applies to the Nebraska program and the general outlook in the United States relating to such organizations as the National Swine Repopulation Association, which was chartered under Nebraska laws in 1960; and (5) miscellaneous disease problems encountered in swine herds enrolled in the Nebraska SPF swine program and possible solutions

Dr. C. E. Phillips Promoted, Assigned to Ames

Dr. Charles E. Phillips (ONT '40) has been promoted to the position of principal veterinarian, Viral and Aerobic Biologics, Biologics Control, USDA National Animal Disease Laboratory, Ames, Iowa.

Dr. Phillips will be responsible for the evaluation and improvement of procedures presently in use for examination of large animal viral and aerobic biological products as well as for the development of new procedures and techniques to more adequately evaluate large animal viral and aerobic vaccines and related products.

He joined the USDA Animal Inspection and Quarantine Division in 1958 at Omaha, Neb. In 1960 he transferred to East Lansing, Mich., where he conducted a veterinary biological products test evaluation and development program at Michigan State University. He transferred from East Lansing to his present position.



**Dr. Charles E.
Phillips**

Dr. D. L. Croghan Heads Small Animal Biologics Control

Dr. Donald L. Croghan (KSU '49) has been promoted to the position of principal veterinarian, Small Animal Biologics, Biologics Control, USDA National Animal Disease Laboratory, Ames, Iowa.

Dr. Croghan will be responsible for the evaluation and improvement of procedures presently in use for examination of small animal biological products as well as the development of new procedures and techniques to more adequately evaluate small animal viral and aerobic vaccines and related products.

He entered the USDA in 1951 at St. Joseph, Mo., with the Virus-Serum Control Division. In 1958 he transferred to East Lansing, Mich., where he conducted a veterinary biological products test evaluation and development program for the Animal Inspection and Quarantine Division at Michigan State University. He transferred from East Lansing to his present position.



**Dr. Donald L.
Croghan**

Dr. D. D. Oshel Heads Poultry Biologics Control at Ames

Dr. Dale D. Oshel (KSU '51) has been promoted to the position of principal veterinarian, Poultry Biologics, Biologics Control, USDA National Animal Disease Laboratory, Ames, Iowa.

Dr. Oshel will be responsible for the evaluation and improvement of procedures presently in use for the examination of poultry viral and aerobic biological products as well as the development of new procedures and techniques to more adequately evaluate poultry viral and aerobic vaccines and related products. This includes application of varied procedures to ascertain that such standard procedures assure potent products to the public



Dr. Dale D. Oshel

and that these products maintain potency.

Dr. Oshel entered USDA as a veterinary trainee in 1950 with the Brucellosis Division of the Bureau of Animal Industry in Minnesota. In 1951 he accepted appointment with the Virus-Serum Control Division at Kansas City, Kan., and remained there until he transferred to Pearl River, N.Y., in 1955. In 1958 he transferred to East Lansing, Mich., where he conducted a veterinary biological products test evaluation development program for the Animal Inspection and Quarantine Division at Michigan State University. He transferred from East Lansing to his present position.

He is a member of the AVMA, the National Association of Federal Veterinarians, and the Michigan Society of American Microbiologists.

Dr. M. E. Macheak Promoted, Sent to Ames

Dr. Merlin E. Macheak (ISU '50) has been promoted to the position of principal veterinarian, Anaerobic Biologics, Biologics Control, USDA National Animal Disease Laboratory, Ames, Iowa.



**Dr. Merlin E.
Macheak**

Dr. Macheak will be responsible for the evaluation and improvement of procedures presently in use for the examination of anaerobic biological products as well as the development of new procedures and techniques to more adequately

evaluate anaerobic vaccines and related products. This includes application of varied procedures to ascertain that such standard procedures assure potent products to the public and that these products maintain potency.

His first employment with the USDA was at Fort Dodge, Iowa, in 1949 as a veterinary trainee with the Virus-Serum Control Division. Upon graduation, he returned to the Virus-Serum Control Division at Fort Dodge and remained there until he transferred to Kansas City, Kan., in 1953. In 1959 he transferred to Bozeman, Mont., where he conducted a veterinary biological products test

evaluation and development program for the Animal Inspection and Quarantine Division at Montana State College. He transferred from Bozeman to his present position.

He is a member of the AVMA and the National Association of Federal Veterinarians.

Dr. W. H. Irvin Assigned to New Jersey

Dr. Willis H. Irvin (AUB '43) has recently been named inspector in charge of the Newark, N.J., station of the Meat Inspection Division, USDA. He went to his new post from New York City where he has been the assistant inspector in charge since 1958.



Dr. W. H. Irvin

Dr. Irvin entered duty with the Meat Inspection Division at Atlanta, Ga., in 1948, and subsequently held assignments at Omaha, Neb.; Chicago, Ill.; and Indianapolis, Ind.

Dr. A. J. Clark, Jr., Transferred to New York

Dr. Ashley J. Clark, Jr. (TEX '44) has recently been transferred with promotion from St. Louis, Mo., to the position of assistant inspector in charge at the New York City Meat Inspection station, USDA. He succeeds Dr. W. H. Irvin who recently was named inspector in charge at Newark, N.J.



Dr. A. J. Clark, Jr.

Dr. Clark entered the meat inspection service in 1954 and has since held supervisory positions at Moultrie, Ga., and St. Louis, Mo.

Veterinary Military News

Col. N. G. MacEachern Transferred

Colonel Neil G. MacEachern (AUB '41) was recently assigned to Headquarters, Air Force Systems Command, Andrews Air Force Base, Washington, D.C.

The colonel, who reported to his new post after serving for the past five years at the U.S. Air Force Academy, Colorado Springs, Colo., assumed duties as command veterinarian and deputy assistant for bioastronautics and veterinary support. The Air Force Systems Command is responsible for all phases of acquisition of new aerospace systems, from the earliest applied research to the final installation and checkout.

Colonel MacEachern was former command veterinarian of the U.S. Air Force Academy, Air University and Air Material Command.



Col. N. G. MacEachern

Colonel F. D. Maurer Assigned to Fort Knox

Colonel Fred D. Maurer (WSU '37), a veterinary pathologist and virologist, has been named director, Pathology Division, at the U.S. Army Medical Research Laboratory, Fort Knox, Ky.

Colonel Maurer is an authority on viral diseases of domestic animals of economic importance in Africa and the Near East. He recently spent two months working with African horse-sickness in the Middle East where serious losses have been caused by this disease.

Before going to his present assignment, Colonel Maurer served as chief, Veterinary Pathology Division, Armed Forces Institute of Pathology, Washington, D.C. His duties included the direction of six different research projects including the pathologic evaluation of irradiated food, malignant lymphoma of domestic animals, and cosmic ray studies.

His concern for possible importation to the U.S. of diseases for which there is no effective treatment has inspired him to write a number of articles pointing out this danger. His publications include such subjects as rinderpest, infectious bovine rhinotracheitis, bovine pleuropneumonia, African swine fever, hog cholera, and Rift Valley fever.

Deaths

Star indicates member of AVMA

***Ralph Comin** (COR '42), Bridgewater, Va., died June 16, 1961.

Dr. Comin worked for the federal government in the Inspection Branch, Poultry Division, Agricultural Marketing Service, USDA.

Henry A. Copeland, 68, of Houston, Texas, died July 23, 1961.

Dr. Copeland, who was retired, had moved to Houston from Odessa, Texas, last spring.

Jean A. Flanigan (WSU '37), 49, Eugene, Ore., died June 15, 1961.

Dr. Flanigan was a general practitioner in Eugene since 1937. He was a member of the Oregon and Lane County V.M.A.'s.

Arthur J. Knilans (CVC '16), 74, Janesville, Wis., died July 5, 1961.

Dr. Knilans maintained a practice in Janesville with his son, Dr. Richard Knilans (KSU '49). He was known in southern Wisconsin for his work in tuberculosis eradication. He had also worked as an experimental and consultant veterinarian for meat packers and as a federal veterinarian.

He was a charter and life member of the Rock Valley V.M.A. and a member of the Wisconsin V.M.A. and the International Veterinary Congress.

William F. Latshaw (IND '08), 89, Shelbyville, Ind., died June 23, 1961.

Dr. Latshaw was a veterinary surgeon in Shelbyville for 48 years. He had retired in 1956. His son, Dr. C. P. Latshaw (OSU '29) is also a veterinarian.

He was a member of the Indiana V.M.A.

***Stanley N. Smith** (NYC '92), 89, Columbia, Mo., died June 22, 1961.

Dr. Smith was engaged in active general practice until he broke his hip in a fall 14 months ago. Since 1950 he had served on the clinic staff of the University of Missouri, School of Veterinary Medicine. He was one of the first veterinarians in Missouri to become a member of the Missouri V.M.A., and he served as president and secretary of the association. He became a life member of the association in 1948 and was awarded the first association Certificate of Appreciation in 1958 for his part in training veterinary students. He became a life member of the AVMA in 1955.

Dr. Smith was mayor of Columbia, Mo., for two terms and served two terms on the city council.

Edwin H. Steele (KCV '15), 79, Neodesha, Kan., died June 29, 1961.

Dr. Steele was retired.

***John J. Wermuth** (COR '12), 73, Warwick, N.Y., died May 26, 1961.

Dr. Wermuth was retired. He had practiced at Albany, N.Y.

Women's Auxiliary

Auxiliary Officers Installed

Mrs. C. M. Rodgers was installed as president of the Women's Auxiliary to the AVMA at installation ceremonies during the convention August 23 in Detroit.

Mrs. Rodgers, the wife of Dr. C. M.

Rodgers (OSU '34), immediate past vice-president of the AVMA, succeeds Mrs. E. E. Leasure, Manhattan, Kan., to the presidency.

Mrs. Rodgers joined the Women's Auxiliary to the AVMA in 1948. She is also a member of the Illinois, Mississippi Valley, and Northern Illinois V.M.A. auxiliaries. She was secretary-treasurer of the Mississippi Valley auxiliary in 1940, and delegate of that auxiliary to the convention of the



Mrs. C. M. Rodgers

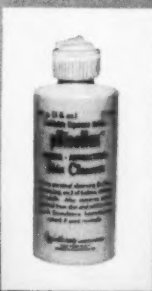
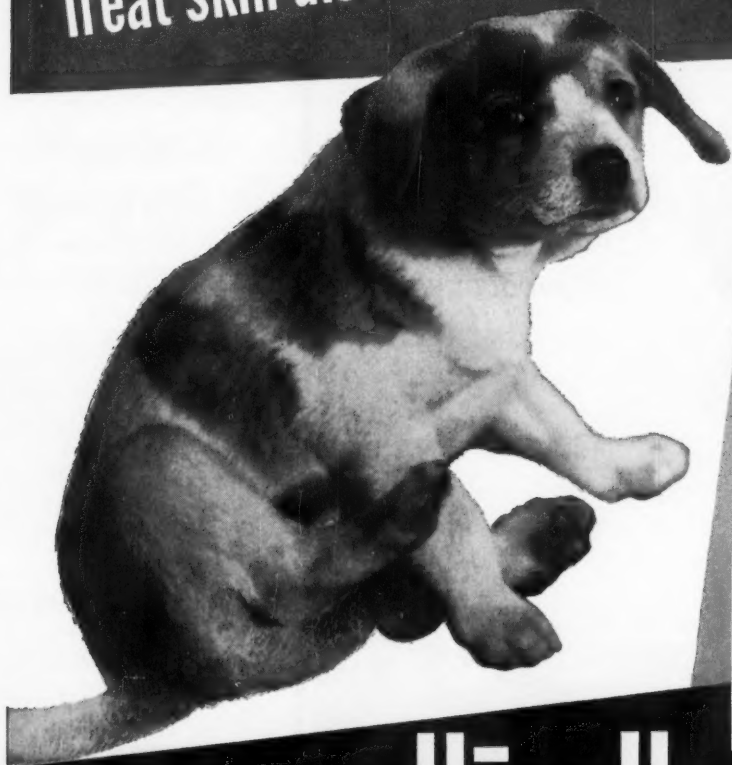
Women's Auxiliary to the AVMA in 1950. She was vice-president in 1949 and president in 1950 of the Women's Auxiliary to the Illinois V.M.A.

She served the national auxiliary as parliamentarian, 1948-1950; chairman of the House of Representatives, 1950; secretary, 1951-1954; membership secretary, 1954-1959; vice-president for student auxiliaries and student awards, 1959-1960; and president-elect, 1960-1961.

She also participates in many church and civic activities. Dr. Rodgers is in general practice in Blandinsville, Ill.

Other officers installed at the convention are: president-elect—Mrs. J. I. Cornwell, North Carolina; vice-president for House of Delegates—Mrs. Austin Eivers, Oregon; vice-president for publications—Mrs. A. M. Simpson, Texas; vice-president for public relations media—Mrs. Don W. Clarke, Oregon; vice-president for student auxiliaries and student awards—Mrs. B. S. Pomeroy, Minnesota; vice-president for student loans—Mrs. George Dorney, New York; secretary—Mrs. D. A. Osguthorpe, Utah; membership secretary—Mrs. S. L. Hendricks, Iowa; and treasurer—Mrs. Peter S. Roy, Florida.

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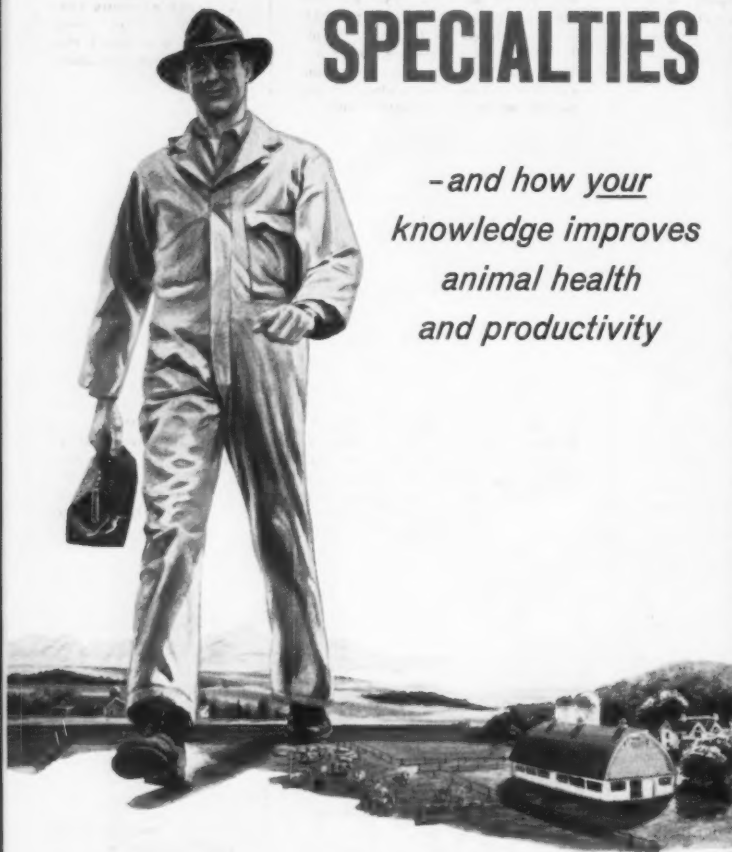
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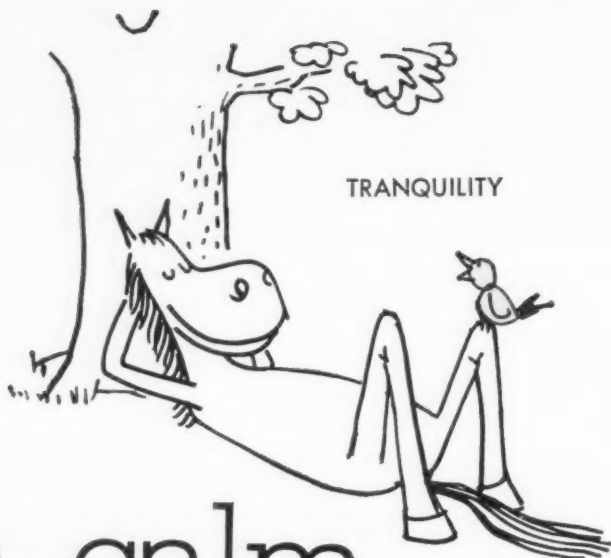
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President's Address to the House of Delegates

E. E. Leasure, D.V.M.

It seems as yesterday that I made my first short appearance before the AVMA House of Delegates in Kansas City, Mo., two years ago. The months have passed rapidly, but yet, upon reflection, I have witnessed great progress in organized veterinary medicine. Many seeds have been sown; some have sprouted, taken root, and were harvested, while others are lying dormant waiting for the proper environment and impetus to take action.

In citing specific areas of progress made by the Association during the past year, it is not my intent to bore you with details or to pay special tribute to any individual or group of individuals; however, I do wish to point out that the combined action of many dedicated individuals made progress possible, and to these I extend my sincere thanks and appreciation.

The financial status of the Association is very good. This is due to careful budgeting and the efficiency of our staff.

The departmentalization of staff responsibilities, accomplished two years ago, provided for greater efficiency and increased activities of the Association. However, it will be necessary to continue to expand the staff as increased work loads occur. In this respect, the load carried by some of our councils, and specifically the Council on Education, is so heavy that the employment of a full-time secretary seems appropriate. This would have the effect, temporarily at least, of providing

more secretarial time to other overloaded councils by the shifting of responsibilities.

Public Information

The matter of public information has been of great concern to the AVMA and



Dr. E. E. Leasure

the profession for many years. During the past year the public relations department of the AVMA was reorganized and the public relations activity of many of the constituent associations was greatly increased. Because of these factors and certain happenings on the national level, this has been our banner year in the field of public relations since more news items

This address was presented at the 98th Annual Meeting of the AVMA in Detroit, Mich., Aug. 20-24, 1961.

reflecting favorably upon the veterinary profession appeared than ever before.

A step contributing to this program was made when the AVMA held its first public relations conference for representatives of constituent associations. The conference was informative, educational, and stimulating and served to set a pattern and goals for the future.

Participating in the 1961 National Science Fair-International created a great deal of favorable national recognition for the profession and, at the same time, created a deeper bond of understanding among the professional groups of medicine, dentistry, pharmacy, and veterinary medicine.

I should like to cite also the immense amount of favorable public information that grew out of "Ham" the chimp's ride into orbit, when it was announced that his attending doctor was a veterinarian. This story reached hundreds of thousands of people.

Communications

A good many of us have been concerned about the association's communications with its members. This is quite evident in the addresses of past-presidents Kester, Armistead, Rebrassier, and Scheidy. Your elected officers and staff re-evaluated the proposal for an AVMA newspaper and, although the proposal was not rejected, a substitute was made—the revamped news section now appearing in the JOURNAL. While it is too soon to accurately appraise results, comments have been quite favorable.

A year ago last spring, the Executive Board wisely directed that representatives of the AVMA traveling at AVMA expense to constituent association meetings would speak on organized veterinary medicine. This action, I'm sure, has contributed greatly to enlightening our members of AVMA activities, services, and benefits to the members.

During the year the second Conference for Secretaries of Constituent Associations was held. The theme of the conference was communicating with members. The program was excellent, the attendance was very good, and I'm sure that a great deal of information was provided the secretaries to carry back to their associations. As was the case last year, the AVMA under-

wrote a part of the expenses of the representatives to the conference. This conference is another example of AVMA service to members and to organized veterinary medicine.

It is my opinion that when the members of the veterinary profession fully understand and are made aware of the many things the AVMA does on their behalf, the matter of membership will no longer be a problem.

Recruitment Program

During the year just completed, a great deal of effort was expended by many individuals and the Association in creating a national awareness of the importance of recruiting highly qualified and highly motivated students for a career in veterinary medicine. This phase of informing veterinarians of their responsibility in this regard has, in my opinion, been successful.

Upon recommendation of the Board of Governors, the Executive Board, at its meeting last April, approved a tentative plan for a "National Recruitment Program for Veterinary Medicine" and directed the professional staff to proceed in developing the program. This is a real step forward because recruitment is everyone's business, including that of organized veterinary medicine, the colleges of veterinary medicine, and the individual veterinarian. The need for such a program is obvious as has been reflected over the past few years with a declining number and quality of applicants to our veterinary schools. Other branches of the medical sciences have experienced this same trend and quickly recognized its seriousness. Medicine and dentistry, for example, are far ahead of veterinary medicine in their national recruitment programs. If we are to meet the growing demands upon the profession for more and better veterinarians, then we must attract more highly qualified and motivated applicants to our veterinary schools.

The veterinary profession is grateful, I'm sure, to Dean I. A. Merchant of Iowa State University for writing the story, "Should You Be a Veterinarian?" and especially to the New York Life Insurance Company for having this career story published in many leading magazines this spring and summer.

Liaison Activities

The AVMA continued to represent the profession and, in fact, to expand its cordial working relationship with many allied and nonallied professional and nonprofessional organizations and groups in a large number of areas of related interest. To elaborate upon these activities and accomplishments would be presumptuous on my part, because to do so would require far too much detail.

I would like to point out, however, that representatives of the AVMA this year called upon the Board of Trustees of the American Medical Association and upon two cabinet members of the present administration: Mr. Frank Welch, Assistant Secretary of Agriculture, and Mr. Abraham Ribicoff, Secretary of Health, Education and Welfare. Your representatives were cordially received in all instances and were able to discuss problems of mutual interest.

I am of the opinion that these liaison relationships, whether they were made by councils, committees, staff members, or the Board of Governors, are worthwhile and generally were highly successful. These contacts provide representatives of the AVMA an opportunity to represent its members in many important areas and should be continued.

The Prospectus

Action on the prospectus, a survey to evaluate the achievements, resources, and potentialities of the veterinary medical profession in the United States and Canada, with a view to determining the desirable growth and development of the profession for the future, got under way when the Executive Board appropriated an amount not to exceed \$25,000 and authorized the Prospectus Committee to employ a consulting agency and, under the guidance of this agency, to develop the objectives of the prospectus survey.

This committee assignment is a difficult one that has required many meetings and will take time. To date, an agency has not been employed, but we are hopeful that the committee will be able to employ one and get the program on the road before the end of this year.

The Women's Auxiliary Campaign

As you all know, the Women's Auxiliary

to the AVMA, under staff direction, launched its nation-wide campaign on Feb. 1, 1961, to raise \$75,000 for the Research Trust Fund. Although this goal was not attained, the campaign was highly successful since approximately \$51,000 was collected through their efforts. This sum will enable the AVMA to continue its Fellowship Awards Program to qualified veterinarians on the present level for approximately one and one-half years. If the program is to continue indefinitely into the future, it therefore becomes obvious that the AVMA must look for sources of new revenue in the immediate future.

It may be logical to add a full-time fund-raising specialist to the central staff for this purpose or to stipulate an increase of membership dues to support this worthy Fellowship Awards Program. I call your attention to Resolution No. 10, providing for an increase of \$10 in dues for this purpose. Is it not dangerous, however, to earmark specific amounts for specific purposes? If dues are to be raised, I would prefer to see them increased by \$20 and leave it up to the Executive Board to budget what it considers necessary for the research program and the various other programs.

I recommend that this body, by its official action, extend the AVMA's heartiest thanks and appreciation to the Women's Auxiliary for a job well done.

Resolutions

I should like to dwell briefly on the matter of resolutions because it is my observation that resolutions properly drawn up can be effective in accomplishing the program of the AVMA.

A year ago this body adopted Resolution No. 16 which, in effect, called upon the United States Civil Service Commission for a review and reclassification of veterinary positions in the United States Department of Agriculture. The review was undertaken by November, 1960, and was completed early this spring. Recommendations, to become effective soon, were made to Congress which will result in increasing the entrance grade and reclassification of veterinary positions throughout the service. When the changes become effective, benefits for positions will be between \$500 and \$1,000 through grades GS-9 and 11.

You will recall at the last meeting the

discussing and the passing of Resolution No. 24: "Resolved, that the AVMA voice its condemnation of this continuing infringement upon the privilege of veterinary medical practice by laymen performing under the auspices of the Agricultural Research Service of the United States Department of Agriculture, and earnestly requests that such practices cease forthwith." We refer to the Puerto Rican situation. Action was obtained and the matter was amicably resolved before the end of 1960.

I cite the two resolutions above to demonstrate progress as well as services to the membership and to the profession.

Resolution No. 4, Fees for Services Rendered on USDA Disease Eradication Programs, before you for action is of equal portent to the two cited above. I, therefore, urgently request your favorable consideration.

Council Activities

The six councils have done an excellent job in carrying out their assignments during the year. Although you have a full report of their activities in the booklet before you, I will touch briefly on some of the highlights not mentioned previously.

The Council on Education reports that the Advisory Board in Veterinary Specialties completed its brochure entitled, "Procedure for Establishment of Veterinary Specialty Organization." If approved at this meeting, the brochure becomes an important document, because it provides information on specialization in veterinary medicine and outlines procedures for establishment of veterinary specialty organizations which have certification of specialists as one of their functions.

The years ahead will witness a great increase toward specialization and organization by groups of veterinarians who have a common interest in a specific area of endeavor. Hence, the need for a document of this nature becomes more apparent.

The Council on Veterinary Service, in addition to its many other activities, sponsored a special panel on Canine Hip Dysplasia. Such panels are of inestimable value because they bring together the latest information of specialists on specific animal diseases or conditions and speed up the dissemination of this information to all veterinarians, thus providing ultimately a

better service to the public. There are undoubtedly many other diseases and conditions of equal importance that should receive the same type of consideration in the future.

The Council on Public Health and Regulatory Veterinary Medicine, after a careful study of the unprecedented spread of animal diseases throughout the world, places before you Resolution No. 9. So as to provide maximum protection to North American livestock and poultry, it, in effect, requests the AVMA to actively support the securing of sufficient appropriations to staff the international animal inspection and quarantine programs of the USDA and to provide adequate facilities for inspection and quarantine, including laboratory procedures, of animals presented for entry into the United States.

Other resolutions are undoubtedly of equal importance; for example, No. 12, "Biological Products," should share your earnest consideration.

Legislation

The Washington office has been very active during the current year by providing the membership with condensed information relative to pending bills in the Congress that directly or indirectly affect every veterinarian. One bill of particular interest to the profession that has passed the House is HR 10 (Keogh Bill), Self-Employed Individual Retirement Act. At this writing the bill has passed the House, was scheduled for hearing before the Senate on July 25, and has made some progress since.

Other bills of particular interest to veterinary education that have been introduced into both houses of congress and have not yet been scheduled for a hearing, are HR 2451, Representative Andrews, and S 1393, Senator Humphrey, identical bills "to authorize a ten-year program of grants for construction of veterinary educational facilities, and for other purposes." We are grateful to the membership for the assistance they have given by contacting their representatives and senators regarding the proposed legislation.

Proposed Amendments to AVMA Bylaws

A number of proposed amendments to the AVMA Bylaws were presented to the

House of Delegates at its session in Denver. They have, during the year, received consideration by all the constituent associations and will be presented for final action at this session of the House of Delegates. All of these amendments are worthy of your most careful consideration and deliberate action.

Profession Constantly Changing

I invite your attention to the fact that veterinary medicine is still in the midst of another of its great revolutions. Do not be misled into believing that the changing agriculture picture is solely responsible when, in reality, there are many factors responsible for this constantly changing veterinary medicine. Education has advanced our knowledge and skills; research and science have given us new tools and methods; increases in our animal, pet, and poultry populations have changed our concepts of management and administering; the public has demanded more and improved services; and, last, matters of economics have had to be considered.

This ever-changing veterinary medicine has brought about so many problems that have occupied the attention of many of your representatives during the year that I cannot mention all of them in this brief address. I would like to state, however, that since they have been considered, they are known and progress is being made.

Concomitant with this revolution of recent years, there has been a great growth and expansion of AVMA activities and services. The budget has doubled, the staff has nearly tripled in size, the Journals have been improved and their contents increased, new programs have been started, and many more programs will be implemented. During this interim the membership has increased, dues were raised only slightly, and costs have continued to soar.

What About the Future?

From my experiences and observation while working with the staff, officers, and representatives of the AVMA during the past year, it seems to me that the work calendar is full. Many of the Association's problems and programs are of a continuous nature while others are new and are just getting underway. The real need of the future, therefore, is to solve our problems at hand to the best of our ability; to attack new problems as we always have done as they appear; and to finalize our old and new programs of a noncontinuous nature. The continuous programs, of course, will always be with us and constitute perhaps the majority of the work to be done. There is no doubt that the work ahead will require additional expenditures and staff. For example, the recruitment program alone will most likely cost a minimum of \$30,000 when fully implemented and could easily cost \$200,000; to support the Fellowship Awards program, another \$15,000 or \$20,000 will be needed annually; and so on.

I recommend, therefore, that the House of Delegates vigorously support the activities of the AVMA and, if need be, authorize the Executive Board to take the necessary steps to procure additional resources as needed.

This year of service with the AVMA has been a most inspiring and stimulating experience and, indeed, I have been greatly honored in serving. The cooperation, assistance, and counsel of the staff and membership have been most helpful and are deeply appreciated.

I accepted this office with a deep sense of humility and appreciation and was fully aware of the responsibilities attached thereto. I hope I have represented the Association in a manner befitting its president, and my fervent prayer is that the profession may progress and develop in order to be better able to serve.

Blueprint for Action

Mark L. Morris, D.V.M.

It is with humility that I address you today. To a Colorado farm boy receiving the privilege of serving you as AVMA president, this moment brings a deep feeling of humility—and appreciation for the benefits given to me by our profession. To all of you who made this possible, I am deeply indebted.

As I think back over my exciting years in the profession, I remember them as years of building. Most veterinarians, in fact, are builders. You have had to build for your profession through your education; you have built through experience; many have built practices; many have built businesses. Building is a continuing process for a professional man.

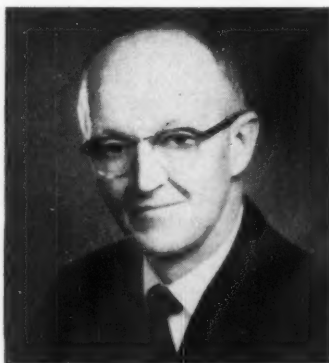
Building often is the symbol of our profession. And always, we build from a design, a plan—a blueprint. Today, I would like to talk to you about building our profession—about a blueprint for action.

During the past 12 months I have spent most of my time preparing for the next 12 months—and will not belabor you with a report of meetings attended and mileage covered. I did find it takes a full year to get ready for the responsibilities of this office, and I earnestly recommend to our new president-elect that he prepare for a busy year.

Just the other day I received a birth announcement from the wife of a veterinary student who had named the baby Mark L., she said, with the hope that some day the boy might aspire to the leadership of this profession. Regardless of whom the baby was named after—it could have been any of our profession's leaders and officers—these parents are passing on the ideals of the leadership of a beloved profession. It is this type of dedication that builds a tradition for veterinary medicine. It is often these second, third, or fourth genera-

tion veterinarians who become really dedicated to making the degree of D.V.M. have the stature it rightly deserves.

A few weeks ago at our mountain cabin in Colorado, I went through the JOURNALS



Dr. Mark L. Morris

tion to read the speeches of past presidents. I was impressed by the ideas and recommendations of these dedicated leaders. Many of their ideas have been officially approved by the Executive Board and the House of Delegates and are now an integral part of our AVMA. Unfortunately, not all of their excellent proposals have been incorporated into the AVMA program. I wish to acknowledge to these past presidents credit for many of the ideas mentioned in this report—this blueprint. Other ideas have come from AVMA councils, committees, headquarters staff, individual veterinarians, industrialists, businessmen, and government agencies.

My role here is to present the blueprint. The decision to build the structure is up to you, the members of our profession.

A blueprint covers many details, specifications that dovetail together into plans for a structure. Today, I shall discuss these

Delivered at the Opening Session of the 98th Annual AVMA Convention, Aug. 21, 1961, Detroit, Mich.

details, which together form a plan for building.

Recruitment

No problem facing our profession today is more important than the recruitment of veterinary students.

No longer are there numerous qualified applicants for openings in first-year classes. Today, I am advised, some schools barely receive an acceptable applicant for each opening.

The effect this will have on our profession in a few years is apparent. The men you will work with five years from now, your colleagues and junior assistants, are entering schools today. If they are not of the highest caliber, your profession—and you as an individual—will suffer.

Our recruitment program shows improvement in states where veterinary schools are located. But a veritable "no man's land" exists in those states where there are no veterinary schools.

The solution calls for intensified recruitment programs utilizing the AVMA, the colleges of veterinary medicine, the state and local associations and, most important of all, the individual veterinarian.

Admission to Veterinary Schools

It is necessary that we modernize our educational system by standardizing admission requirements to veterinary schools.

Gone are the days when a young man was fairly certain to attend the school in the area where he was born—and to practice in that same area. In our highly mobile world today, we must have standardized entrance requirements so a young man can, if qualified, enroll in a school of his choice.

This is a challenge for our Association, and especially for the Council on Education. The re-evaluation and revision of these entrance requirements can only be solved through cooperation among the colleges and state organizations; they can best be achieved through the AVMA.

Education

Our Council on Education faces great problems and responsibilities. Veterinary schools are still largely geared to training for private practice, yet current estimates indicate 40% of their graduates go into other endeavors. Veterinary schools can-

not hope to train for all the specialties; we must consider revising curriculums toward broader basic training. Integration and expansion of animal production units indicate the need for fundamental training in the principles of environment, sanitation, breeding, nutrition, and preventive immunization. The expanding requirements of research institutes, industries, and government agencies throughout the world demand the services of veterinarians with such broad basic education.

It is therefore suggested that our Council on Education:

- 1) Promptly encourage a program to graduate an increasing number of veterinarians.

- 2) Encourage the expansion of programs for graduate education in veterinary medicine as rapidly as possible.

- 3) Institute a training program for professors of veterinary medicine and veterinary scientists engaged in research in the preparation of research designs.

- 4) Integrate the entire program of veterinary education with the general program of the AVMA and keep the AVMA members informed of developments.

- 5) Develop information concerning all phases of veterinary education for dissemination to the general public, especially to those organizations and individuals whose impact can be felt, and to all agencies of government from which increased funds might be available in the future.

These responsibilities necessitate increased budget and additional staff for our Council on Education. Such recommendations have already been made to our Executive Board.

Professional Orientation

Of all professions, the veterinary profession is one of the few that expects beginning practitioners to stand alone. Some period of supervised orientation, perhaps under constituent association sponsorship, would be of inestimable assistance to the young veterinarian entering upon his professional career. Established and experienced practitioners can render great service to our profession by acting as advisors and sponsors during the orientation period. It is, therefore, recommended that our Council on Veterinary Service consider various plans and suggestions from our

members and present a program for consideration at our next annual meeting.

Research

At present, with our limited funds, about all that the AVMA can hope to accomplish is the granting of fellowships to selected graduate students. This past year our Auxiliary raised \$51,000 for this program, and in addition, the Chicago area veterinarians, through a well-designed program, raised another \$5,100. These funds are being used to provide fellowships for 11 graduate students.

Biomedical Research

The management of animal colonies used in research is a responsibility which our profession shares with scientists in genetics, nutrition, biochemistry, and other disciplines. Diagnosis of laboratory animal diseases and the care and treatment thereof needs to become more a part of veterinary education, and students need to be made aware of this field of specialization. It is estimated that 500 specially trained veterinarians are needed in the immediate future.

The American Board of Laboratory Animal medicine now certifies specialists in this discipline. In cooperation with other scientific and medical associations and government agencies, our Association must be prepared to assume its share of responsibility.

Veterinary Hospitals

Today many hospitals are located in industrial areas because of restrictions by zoning boards. But in order to serve the pet-owning public more conveniently, they should be in or adjacent to modern shopping areas.

The thinking of the thousands of zoning boards of the country must be modified in order to locate hospitals where they rightfully belong. Today's modern hospital, air-conditioned and soundproof, cannot be considered a nuisance. Zoning regulations have not kept pace with hospital improvements.

Our AVMA is working closely with the American Animal Hospital Association on a program which provides guidance for local associations in working with municipal planning and zoning boards.

Partnerships and Group Practice

Individual practice is rapidly becoming more complicated. To meet the demands for services in many areas, it is now necessary for groups of veterinarians to work together where all can use a single x-ray machine, a single laboratory, and other facilities. Some states have already enacted laws which permit professional groups to function as corporations. This situation requires very careful observation and study by the AVMA as well as constituent associations. I recommend the appointment of a committee for the continuing study of this problem.

Fee Schedules

There is increasing interest among practitioners in exchanging information on fee schedules. Discussions with attorneys suggest that while such exchanges of information are not illegal, efforts to establish uniform fees for services or supplies should be undertaken only with good legal advice.

Government Veterinarians

For many years the AVMA has had a successful program designed to raise the financial status of veterinarians in government service. This program has varied somewhat over the years, but the military veterinarian has long received extra compensation because of AVMA action. Currently, another recommendation sponsored by the AVMA is being considered, whereby civil service veterinarians would receive substantial pay increases. Favorable action is predicted.

Livestock Diseases

In the interest of the public and its health and welfare, members of our profession have been active this year in developing a program for the eradication of hog cholera. Legislation expected to pass during this session of Congress will authorize and direct the Secretary of Agriculture to launch a nationwide program for the eradication of hog cholera. Veterinarians have also developed a code and prescribed other standards for animals used in artificial insemination of cattle. In both instances, the AVMA participated not only from our own viewpoint, but also with the view of protecting the people's interests.

Foreign Diseases

In today's jet age, with continents separated only by a few hours, new problems are arising for the veterinary profession.

Distance is no longer a barrier against animal diseases of other lands. African swine fever is now in Portugal and Spain and threatens the pork supply of all Europe; African horse-sickness has, in the last two years, killed 300,000 horses and mules in the Middle East.

These diseases are only an airplane flight away from the United States. In our rapidly shrinking world, we are passing up opportunities to eradicate and control these diseases while they are relatively confined. We must conduct research and train veterinarians to combat these diseases wherever they may appear.

State and Local Associations

State and local veterinary associations are in the most strategic position to communicate effectively with the members and gain interest and cooperation. For these reasons the following suggestions are offered:

- 1) Employ part-time or full-time executive personnel, either as executive secretary or public relations director. This is a job for a trained administrator who need not be a veterinarian.

- 2) Establish and supervise an orientation program for new graduates in the state.

- 3) Maintain a constant program of member recruitment. Have a worthwhile program and sell it to both members and non-members.

- 4) Develop and expand community consciousness and encourage members to participate in community affairs.

- 5) Develop a program of recruitment for students who may have some aptitude for veterinary medicine.

- 6) Publish some type of communication medium, a newsletter or journal, and distribute it regularly to the members, carrying items of interest on state and local levels.

- 7) Develop an effective legislative program and tie it in with the AVMA's program in Washington.

- 8) If your association presently employs the services of executive paid personnel,

you are to be complimented; however, you should make every effort to evaluate your present programs, determine how these can be made more efficient, and how such programs can be more closely integrated with those of the AVMA.

- 9) Carefully select from your membership a grievance committee of experienced practitioners. This committee may well include your public relations counselor. It should be the function of such a committee to hear complaints from the public concerning inadequate services, mishandling of patients, inhumane practices, etc. An opportunity for the animal owner to appear before such a committee will usually prevent stories reaching the public press.

- 10) Cooperate in the organization of an interprofessional committee or council. Develop a program so that professional interest is maintained throughout the year. Relationships with other professions is of inestimable value. The Colorado State V.M.A. next month is providing a half-day program on veterinary medicine for the annual meeting of the state medical society. Medical and veterinary professions can cooperate in work on health fairs, science fairs, in student recruitment, and in many other ways.

Legislation

The laws of municipalities, states, and national governments affect the veterinarian in many ways, sometimes even determining whether he can maintain a successful practice. Legislation is not something done in Washington or at the state capitol. It starts at city hall. Such challenges as zoning, rabies control, and relationships with humane organizations are determined to a great extent at the local level.

It behooves every veterinary organization in the country—whether it is a handful of veterinarians banded together into a local group or the AVMA—to be legislatively vigilant, to be legislatively positive in their actions.

I believe it would be wise for our members to participate in "Action Courses in Practical Politics" being held in some 1,600 communities this year.

Your AVMA today is active on the legislative front: supporting measures to establish voluntary pension plans; seeking additional compensation for governmental veterinarians; supporting a measure to pro-

vide funds for construction of veterinary educational facilities; seeking better protection against foreign livestock and poultry diseases; and helping create a hog cholera eradication program. Your AVMA has joined with 60-some other organizations in opposing a measure that would restrict scientific research in biological sciences.

Our profession is being ably and effectively served by its Washington office as our watchdog on legislative and governmental affairs. In view of present and future legislative activities, it is recommended that a substantial increase be made in the staff and budget of our Washington office.

Public Relations

In recent years, several sensitive areas have developed in our public relations. Our relationships with humane organizations could be improved; our relationships with allied professions need cultivation; our relationships with opinion leaders need improvement.

This is said not as criticism of our past and current effort, but to focus attention on areas where, for various reasons, we have not kept up.

Our headquarters office has a full-time, experienced, public relations executive. It is swamped with requests for brochures, films, news releases, broadcast materials. It is faced with our centennial promotion for 1963. Your Executive Board and House of Delegates have already approved plans for an expansion of this department but it requires more people and more money.

Many of our state associations have employed public relations counselors for years, thereby developing a reservoir of public relations experience. This reservoir is located in the four corners of the country and must be utilized by the AVMA.

Newsletter

Communication between the AVMA and its 16,131 members must be improved. I am happy to announce that your Executive Board has approved a plan, and instructed its immediate implementation, whereby the AVMA will publish a newsletter to be distributed to each constituent association secretary. It will be so designed that it may be easily abstracted and otherwise used to provide material and information for con-

stituent associations to publish in their own news media. This is certainly a major step forward. Time will tell if this move is adequate. If it proves not to be, then in my opinion, we must go further and publish an AVMA newspaper, or newsletter, for direct distribution to our membership.

Interprofessional Relations

Considerable progress has been made in the past year in the areas of working with the allied professions. The Board of Governors met with the governing body of the American Medical Association and, from this, evolved a policy for the two organizations to work together in areas of mutual interest. The staffs of the two organizations now are cooperating in several projects of mutual interest.

This same type of cooperation has been extended, in some areas, to the state and local levels. Interprofessional councils of, for example, physicians, dentists, veterinarians, lawyers, nurses could render many valuable community services. The AVMA might well take the lead in establishing on the national level an Interprofessional Council which could provide leadership and assistance to state and local affiliates.

Industrial Relations

It has been recommended and adopted as policy that our Association take the lead in establishing closer relations with the pharmaceutical, biological, and feed industries. Very little progress has been made in accomplishing this objective. I recommend that the Board of Governors implement this policy by undertaking a program of meetings between representatives of our Association and executive personnel in these industries in order to promote more effective relations between veterinarians and manufacturers of animal health products.

I have been assured that the veterinary profession and the animal health industry have mutual objectives; that both are interested in promoting the prevention of diseases and improving the economic value of livestock; that our animal industry is constantly looking for the help and advice of the veterinary profession and to problems and conditions that require additional research and improved products; and that all animal industry is interested and desirous for the continued development of the

professional status of veterinarians and is willing to cooperate in mutual endeavors toward this objective.

Journal of Veterinary Research

The *American Journal of Veterinary Research*, a very fine publication with a world-wide reputation, is published every other month. The size of the *A.J.V.R.* is growing and the backlog of manuscripts is increasing even more rapidly. This Journal should be published monthly, or should contain more material. In either case, we will need an additional editor to handle the extra burden. Such an editor might also handle more editorial jobs such as reviewing current literature and assisting practitioner authors in preparing clinically oriented reports. Again this takes money.

The *Research Journal* is now a deficit operation, and increasing the frequency of publication will compound that deficit. It does seem, however, to be the responsibility of our profession to make research results available on a world-wide basis. Our well-edited *Journal of the AVMA* provides a surplus of revenue which I think should be utilized first in publications rather than for other membership services.

Exhibits

Exhibits are as much a part of education as textbooks, as much a part of public relations as a news release.

Two challenging areas call for expanded exhibit programs:

- 1) The use of scientific exhibits by individual participants in veterinary meetings should be encouraged. Through such exhibits, participants can demonstrate new techniques and procedures such as tissue culture for identification of viruses, new clinical pathology tests, etc. Such demonstrations and exhibits would give the audience an opportunity to examine new procedures closely. The AVMA should enthusiastically support such exhibits.

- 2) Our neighboring professional organization, the American Medical Association, is aggressively sponsoring health fairs all over the country. This year for the first time the veterinary profession is cooperating in these fairs. They offer a great opportunity for the veterinary profession to reach the junior high and high school students of the nation. Your AVMA should

invest both time and money in these activities.

Council Secretaries

It has been recommended that permanent secretarial service be provided for the AVMA councils and committees. This recommendation has been fulfilled only in part. We still need secretaries for the Council on Education and for the Council on Research. Additional secretarial services should be provided for other councils and committees as needed.

Auxiliaries

I would like to pay tribute to the hundreds of wives of Association members who have so faithfully served our profession. I am sure the coming years will see them and the wives of our new members playing even more important roles in our profession.

Headquarters Staff

I have been deeply impressed by the sincerity and conscientiousness of our headquarters staff the past year. Their hours are long, extending into night work and week-end meetings. I have found the staff cooperative, energetic, and willing. Both professional and lay personnel are dedicated to veterinary medicine, dedicated to the advancement of our profession.

Home for AVMA

Six years ago your AVMA president recommended a permanent home be built. I can only echo his sentiments. The AVMA is here to stay. It is my opinion that it is time we started building our permanent home.

Planning Board

A recommendation approved some years ago was a proposal that the AVMA work diligently to shape our future veterinary destiny in the best public interest. This policy has not been put into operation.

Therefore, I recommend the establishment of an Executive Board Long-Range Planning Committee and am happy to announce that a study committee has been appointed with this objective in view.

Liaison Representative

The recommendation has been made that the Association employ a field secretary. I

wish to modify this proposal by recommending that the Association employ a liaison representative who would spend much of his time meeting with local, state, and regional veterinary associations, and with allied groups. He should be closely affiliated with your Board of Governors, keeping them informed on veterinary and related activities in all parts of the country. This would eliminate much of the routine administrative load of the chairman of the Board, president, and president-elect to permit them to perform other important services. This individual would furnish continuity to the Board of Governors with its constantly changing personnel.

President-Elect

Our Association elects presidents of widely varying backgrounds and professional experience. This provides wholesome diversity and breadth of view. However, there are certain specific duties and responsibilities of office which require special information and personal contacts. I suggest that immediately upon election, the president-elect spend a period of orientation in the headquarters office and that the year prior to installation as president be devoted to obtaining grasp and mastery of the status and operations of the Association.

President

It has been recommended that the AVMA president be relieved of routine duties and that active contact with allied groups be regarded as his major function. This recommendation has not been put into effect. Certainly, the president should have more time to devote to the various interests allied to veterinary medicine and spend less time on general administration.

The Third Man

On Aug. 1, 1961, AVMA membership stood at 16,131, an all-time high. There is, unfortunately, a reservoir of approximately 7,500 veterinarians who do not belong. Out of every three veterinarians in this country today, one is not a member of his professional organization.

Even more important than loss of revenue is the loss of the cooperation and participation of each veterinarian in the projects and aims of our national association.

The goals of the AVMA cannot be accomplished by the central office alone; each man in his home town must do his part.

The AVMA needs that "third man's" membership and, even more important, he needs the AVMA services and benefits. We can improve our profession, create a better public image, and increase our stature only if we all work together to attain our goals on a broad professional basis—both as individuals and as a team. I urge each AVMA member to make an effort to bring that "third man" into the AVMA fold.

Conclusions

Your AVMA today operates with a budget of \$800,000, a sizeable portion of which is derived from the JOURNAL, not from membership dues. The blueprint I have outlined would require an estimated budget of \$1,400,000. If we really want to build this type of AVMA structure, I believe the funds will be forthcoming from the membership.

Our retiring president recently stated that "if we are to increase the activities of the AVMA and carry out the ideas of work and the continued programs of the AVMA, we are going to have to find new revenue." I agree with him completely.

This means just one thing. Our membership dues must be increased. I believe the best method for providing funds which we must have to support our various programs as they grow and expand would be to increase dues on an escalator basis. I believe that our annual dues should be increased by \$10.00 per year as soon as possible and that they should be increased \$5.00 per year for the three succeeding years, thus making an eventual total increase of \$25.00 per year.

Your profession needs you at the local, state and national levels. It needs you and the "third man."

In the beginning, I mentioned several excellent recommendations of former presidents which were approved but never put into effect. Many of our present deficiencies and problems would not exist had approved policies been carried into effective action.

I came to this convention with this blueprint hopeful of a favorable reception. I have not been disappointed.

Your Board of Governors, your Executive Board, have studied it and recom-

mended its full implementation. Your House of Delegates voted to support its philosophies. Now, it is up to you to determine whether our great profession will continue to progress. As you know, progress requires plans, blueprints, guidance,

and money. We have the plan. We have the blueprints to build the structure. From you must come the money and the judgment.

With all humility, I pledge myself to the building of the structure for the future of our profession.

The Executive Board in Session During the 98th Annual AVMA Meeting



Left to right around the table—Drs. H. B. Roberts, S. F. Scheidy, E. E. Leasure, H. E. Kingman, Jr., Jack O. Knowles, Mark L. Morris, Mrs. Thomas (recorder), Drs. E. A. Woelffer, J. A. Henderson, J. Arburua, R. J. Schroeder, and C. M. Rodgers.

Experimental Evaluation of Culture and Serum Vaccination for the Control of Swine Erysipelas

X. Vaccination of the Offspring of Immune Dams with Relation to Age After Weaning

Richard D. Shuman, D.V.M.

THE INDUCTION of immunity in weanling pigs with anti-swine erysipelas serum and living virulent culture of *Erysipelothrix rhusiopathiae* is subject to (1) a relative balance between the action of the serum and culture, which is influenced by the potency of the serum and dosage, and (2) the degree of resistance to erysipelas acquired passively from immune dams.¹⁻⁴ Because the passive immunity of pigs farrowed by erysipelas-immune dams decreases with age,⁶ the objective of this experiment was to determine the age at which effective vaccination was possible.

Materials and Methods

The base serum in this experiment was ARS lot 10 standard serum, diluted 1:7 with 0.5% phenolized isotonic sodium chloride solution, and identified as serum lot G. Vaccinated animals were given commercial desiccated virulent culture, reconstituted as directed on the label.

Ten gilts, farrowed by erysipelas-susceptible dams and raised in isolation, were vaccinated on the same day within 1 to 2 weeks after being bred. Each was given subcutaneously 20.0 ml. of serum and 1.0 ml. of culture behind the right and left ear, respectively. Temperatures and observations of the sites of vaccination were recorded daily for 10 days. After they had weaned their pigs, the 10 dams were exposed percutaneously to erysipelas infection.

In this experiment, 64 pigs farrowed by the 10 vaccinated dams were used—50 as principals and 14 as pen-contact controls. The principals were distributed evenly as to weight and sex into 5 groups of 10 pigs each. Two litters were represented twice and

5 were represented once in each experimental group. Because of small numbers, 2 litters were represented in only 2 or 3 groups. One litter and surplus pigs from the other litters were distributed as pen-contact controls. The groups were separated from each other by empty pens.

The pigs were kept on a concrete floor from birth until observations were completed after percutaneous exposure, at which time they were placed in outside feedlots. A balanced ration was fed containing an antibiotic* at the rate of 6 lb. to a ton of feed. An iron-dextran preparation,** 2.0 ml. intramuscularly, was given to each pig at 3 to 5 days of age.

The vaccination schedule after weaning at approximately 56 days of age is given (Table 1).

Serum and culture were injected subcutaneously into the right and left axillary space, respectively. Temperatures of the pigs and observations of the culture injection sites were recorded daily for 6 days in groups 1 through 4, and for 11 days in group 5. Hemocultures were made on the third, fourth, and fifth days after vaccination by withdrawing approximately 20 ml. of blood aseptically from the anterior vena cava and inoculating the entire amount in flasks containing 150 ml. of beef infusion broth. Subcultures of the broth were made after 48 hours' incubation at 37 C. and were examined for the presence of *Ery. rhusiopathiae*.

At 94 days after vaccination, the pigs of each group were exposed to swine erysipelas infection by the percutaneous or skin scarification method.³

At 63 days after percutaneous exposure, the pigs of each group were examined antemortem for lameness and leg joint enlargement and postmortem for abnormalities of the leg joints and heart valves. A bacteriologic examination was made routinely of each tarsal and carpal joint for the presence of *Ery. rhusiopathiae*. Synovial fluid from each opened joint was inoculated into culture mediums by means of a sterile cotton swab.

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The author thanks Dr. T. G. White of this division for his help in the conduct of this experiment.

*Aurofac, American Cyanamid Co., Pearl River, N.Y.

**Armidexan, Armour Veterinary Laboratories, Kankakee, Ill.

TABLE 1—Comparative Protection Tests in Pigs Farrowed by Immune Dams and Vaccinated at Different Ages

A) After vaccination															
Group No.	Pigs (No.)	Mean wt. (lb.)	Mean age vaccinated (days)	Dose		Cutaneous reaction at site of culture inoculation (No. of pigs)	Positive hemocultures (No. of pigs)	Temperature response							
				Culture (ml.)	Serum (ml.)			101 F. or above	102 F. or above	103 F. or above	104 F. or above	105 F. or above	106 F. or above	107 F. or above	
1	10	27.5	59.7	0.5	5.0	0	0	10	10	5	2	0	0	0	
Contacts	2	.....	.....	.....	.....	.....	..	2	2	1	0	0	0	0
2	10	36.5	73.7	0.5	5.0	2	1	10	9	3	1	0	0	0	
Contacts	2	.....	.....	.....	.....	.....	..	2	2	0	0	0	0	0
3	10	49.6	87.7	0.5	10.0	1	0	10	10	5	0	0	0	0	
Contacts	2	.....	.....	.....	.....	.....	..	2	2	2	0	0	0	0
4	10	60.1	101.7	0.5	10.0	4	0	10	8	2	0	0	0	0	
Contacts	4	.....	.....	.....	.....	.....	..	4	4	2	0	0	0	0
5	10	79.1	115.7	0.5	10.0	8	0	10	10	4	1	0	0	0	
Contacts	4	.....	.....	.....	.....	.....	..	4	4	3	1	0	0	0
B) After percutaneous exposure															
Group No.	Pigs (No.)	Mean age vaccinated (days)	Mean age exposed (days)	Culture (ml.)	Serum (ml.)	Cutaneous Response* (No. of pigs)		Temperature response							
						I	SL	SG	101 F. or above	102 F. or above	103 F. or above	104 F. or above	105 F. or above	106 F. or above	107 F. or above
1	10	59.7	153.7	0.5	5.0	0	6	4	10	10	10	9	6	3	0
Contacts	2	0	2	0	2	2	2	2	2	0	0
2	10	73.7	167.7	0.5	5.0	3	4	3	10	9	7	5	4	2	2
Contacts	2	0	1	1	2	2	2	2	2	0	0
3	10	87.7	181.7	0.5	10.0	3	5	2	10	8	7	5	3	3	0
Contacts	2	0	9	2	2	2	2	2	1	1	0
4	10	101.7	195.7	0.5	10.0	5	3	3	10	6	5	4	2	2	2
Contacts	4	0	1	1	4	4	4	4	3	3	2
5	10	115.7	209.7	0.5	10.0	7	2	1	9	4	3	1	1	1	1
Contacts	4	0	0	4	4	4	4	4	4	4	5

*I—completely immune; SL—susceptible, localized; SG—susceptible, generalized.

Results

Response of Dams to Vaccination and Percutaneous Exposure.—A cutaneous reaction appeared at the culture injection site of each gilt. It remained localized in 7 and became generalized in 3 (1 to 2 cutaneous lesions not associated with the vaccination site). Although 4 gilts had no loss of appetite, 6 had temporarily either a decrease or none at all. Except for 1 gilt that had a temperature of 106 F. the day after vaccination, the highest temperature responses of the others ranged from 102.6 to 104.6 F. According to the results of the percutaneous exposure, applied after their pigs were weaned, there was complete immunity to erysipelas.

Response of Offspring to Vaccination (Table 1 A).—The response of offspring of immune dams within 7 days after vaccination was as follows:

Group 1.—No cutaneous reaction appeared at the culture injection site, and all hemocultures were negative. Two pigs had a temperature of 104 F. or above (less than 105 F.).

Group 2.—A cutaneous reaction appeared at the culture injection site in 2 pigs, and 1 hemoculture was positive. One pig had a temperature of 104 F. or above (less than 105 F.).

Group 3.—A cutaneous reaction appeared at the culture injection site in 1 pig, and hemocultures were negative for all pigs. Temperatures were less than 104 F.

Group 4.—A cutaneous reaction appeared at the culture injection site in 4 pigs, and hemocultures were negative for all pigs. Temperatures were less than 104 F.

Group 5.—A cutaneous reaction appeared at the culture injection site in 8 pigs, and hemocultures were negative for all pigs. One pig had a temperature of 104 F. or above (less than 105 F.).

Pen-Contact Controls.—These pigs appeared normal; 2 of them had a temperature of 104 F. or above (less than 105 F.).

Response of Offspring to Percutaneous Exposure (Table 1 B).—The response of offspring of immune dams to percutaneous exposure 94 days after vaccination was as follows:

Group 1.—All 10 pigs were susceptible. Six had localized reactions and 4 had generalized infection. Nine pigs had temperatures of 104 F. or above; of these, 6 had temperatures of 105 F. or above, and 3 had

106 F. or above (less than 107 F.). The 2 pen-contact controls were susceptible with localized reactions and temperatures of 105 F. or above (less than 106 F.).

Group 2.—Three pigs were completely immune, and 7 were susceptible. Of the susceptible pigs, 4 had localized reactions and 3 had generalized infection. Five pigs had temperatures of 104 F. or above; of these, 4 were 105 F. or above and 2 were 107 F. or above (less than 108 F.). One pig died 8 days after exposure; *Ery. rhusiopathiae* was recovered from the heart blood, spleen, kidneys, and the 4 leg joints examined. The 2 pen-contact controls were susceptible; 1 had localized reactions, and 1 had generalized infection. Both controls had temperatures of 105 F. or above (less than 106 F.).

Group 3.—Three pigs were completely immune, and 7 were susceptible. Of the susceptible pigs, 5 had localized reactions; 2 had generalized infection. Five pigs had temperatures of 104 F. or above; of these, 3 were 106 F. or above (less than 107 F.). The 2 pen-contact controls were susceptible with generalized infection; 1 had a temperature of 105 F. or above, and the other had 106 F. or above (less than 107 F.).

Group 4.—Five pigs were completely immune, and 5 were susceptible. Of the susceptible pigs, 3 had localized reactions, and 2 had generalized infection. Four pigs had temperatures of 104 F. or above; 2 of these had temperatures of 106 F. or above (less than 107 F.). The 4 pen-contact controls were susceptible; 1 had localized reactions, and 3 had generalized infection. All had temperatures of 104 F. or above; of these, 3 had 106 F. or above, and 2 had 107 F. or above (less than 108 F.).

Group 5.—Seven pigs were completely immune and 3 were susceptible. Of the susceptible pigs, 2 had localized reactions, and 1 had generalized infection. One pig had a temperature of 104 F. or above through 107 F. or above (less than 108 F.). The 4 pen-contact controls were susceptible with generalized infection. All 4 controls had temperatures of 106 F. or above, and 3 had 107 F. or above (less than 108 F.).

Leg Joints and Heart Valves.—The results of an examination of the leg joints and heart valves for abnormalities 63 days after percutaneous exposure were as follows:

Group 1.—No gross abnormalities were

observed among the vaccinated pigs. One pen-contact control died suddenly on the 56th day of the experiment; *Ery. rhusiopathiae* was isolated from the heart blood, lungs, liver, spleen, kidneys, both tarsal joints, and from the vegetative growths on the aortic semilunar and bicuspid valves of the heart.

Group 2.—No gross abnormalities were observed among either the vaccinated pigs or the pen-contact controls.

Group 3.—One of the vaccinated pigs was somewhat lame in the left foreleg with a slight but noticeable enlargement of the carpal joint. There was no gross tissue change within the joint, and *Ery. rhusiopathiae* was not isolated.

Group 4.—One of the vaccinated pigs, although neither lame nor having articular enlargement, had a tarsal joint with an excess of synovial fluid, periarticular proliferation of connective tissue, and capillary injection; *Ery. rhusiopathiae* was not isolated from the joint. One of the 4 pen-contact controls was somewhat lame in the left hindleg, and the tarsal joint seemed enlarged. The opened joint, as well as the left carpal joint, had periarticular connective tissue proliferation. In addition, there was an excess of synovial fluid, which was cloudy and viscous, in the tarsal joint; *Ery. rhusiopathiae* was isolated from both joints.

Group 5.—No gross abnormalities were observed in the vaccinated pigs. Two of the 4 pen-contact controls, although not lame, had enlargement of 2 or more joints; the enlargements were detected in only 1 pig while it was living. Tissue change within the joints was that associated with chronic arthritis as previously described; *Ery. rhusiopathiae* was isolated from 4 joints of 1 pig, but not from the joints of the other pig.

Discussion

The dosage of 20.0 ml. of serum lot G was not sufficient to prevent an undesirable postvaccination reaction in the bred gilts. Further, there were individual differences in the degree of severity of the reactions. Thus, the degree of resistance acquired passively from the immune dams would vary among litters and be highest in the litters of dams that had the most severe reaction. This factor, plus an individual difference within litters, would account for

the dissimilar response within each group either directly after vaccination or to later percutaneous exposure. Also, this factor would tend to extend the age when vaccination would begin to be effective; i.e., as resistance wanes with age, the infectivity potential of the culture vaccine is less inhibited, which induces a greater degree of active immunity. Although the pen-contact controls were not represented equally among the litters, this trend of decreasing resistance with age began as late as 5 through 7 months of age according to exposure results.

It was planned to adjust the dosage of serum for each group to the nature of the immediate postvaccination response of the preceding group, as well as to the increasing mean weight. However, because the response was considered minimal, no marked change in the serum dose seemed indicated except for the pigs of group 3. On the basis of the immediate postvaccination reaction of group 5, had a sixth group been available, a dose of 15.0 ml. of serum would have been indicated. It is possible that more than one increase in the serum dose may have become necessary if the mean weight per group had been commensurate with commercial production; however, the pigs were not fed under these conditions.

The fact that 50% of the pigs of group 4 were immune after vaccination at 101.7 days of age (3.5 months) tends to support the European practice of vaccination at approximately 3 months of age. When vaccinated at 115.7 days of age (4 months), 70% of the pigs were immune, which suggested that the vaccination of pigs from immune dams should be delayed until after 3 months of age.

These experimental results illustrate the problem of a cyclic vaccination program,⁵ because of the intricate relationship of the resistance of the pigs when farrowed by immune dams, the dose and potency of the serum, and the infectivity potential of the culture. Also, the failure to protect most of the vaccinated pigs of immune dams in this experiment suggests a reason for past vaccination failures under farm conditions when the simultaneous method (Lorenz) was used.

Summary

Fifty pigs, farrowed by vaccinated, swine erysipelas-immune dams, were al-

lotted to 5 groups of 10 pigs each after weaning. They were vaccinated with anti-swine erysipelas serum and commercial desiccated virulent *Erysipelothrix rhusiopathiae* at different mean ages after birth. Fourteen pigs from the same source were used as pen-contact controls. The principals were exposed to infection by the percutaneous or skin scarification method 94 days after vaccination with the following results:

In group 1, vaccinated at 59.7 days, all pigs were susceptible.

In group 2, vaccinated at 73.7 days, 3 pigs were immune and 7 susceptible.

In group 3, vaccinated at 87.7 days, 3 pigs were immune and 7 susceptible.

In group 4, vaccinated at 101.7 days, 5 pigs were immune and 5 susceptible.

In group 5, vaccinated at 115.7 days, 7 pigs were immune and 3 susceptible.

All pen-contact controls were susceptible.

These experimental results suggest that pigs farrowed by immune dams should not

be vaccinated until after they are 3 months old.

References

¹Shuman, R. D.: Experimental Evaluation of Culture and Serum Vaccination for the Control of Swine Erysipelas. VI. Vaccination of Weanling Pigs Farrowed by Susceptible and Immune Dams. J.A.V.M.A., 137, (Oct. 15, 1960): 468-472.

²Shuman, R. D.: Experimental Evaluation of Culture and Serum Vaccination for the Control of Swine Erysipelas. VII. Serum Potency with Relation to Immunization of Weanling Pigs. J.A.V.M.A., 137, (Oct. 15, 1960): 473-476.

³Shuman, R. D.: Experimental Evaluation of Culture and Serum Vaccination for the Control of Swine Erysipelas. VIII. Further Observations on Serum Potency with Relation to Immunization of Weanling Pigs. J.A.V.M.A., 137, (Nov. 15, 1960): 606-610.

⁴Shuman, R. D.: Experimental Evaluation of Culture and Serum Vaccination for the Control of Swine Erysipelas. IX. Limits of Safety of Anti-Swine Erysipelas Serum Lot G. J.A.V.M.A., 138, (March 15, 1961): 317-319.

⁵Shuman, R. D.: Suggested Application of Present Knowledge for the Control of Swine Erysipelas. Proc. Book, AVMA (1954): 90-93.

⁶Wellmann, G., and Heuner, F.: Über die passiv durch die Kolostralmilch erworbene Rotlaufimmunität der Ferkel. Zentralbl. Vet.-med., 4, (1957): 557-572.

Influence of Seasons on Development of Hog Cholera Immunity

According to a Romanian report, development of immunity to hog cholera by swine after vaccination with crystal violet vaccine or serum and virus was influenced by season of the year. Development of inadequate immunity in the latter part of the winter and early spring was related to nutritional deficiencies that occurred at that time of year. Best immunity was developed in late spring, summer, and fall, because of the general physiologic well-being of swine at that time of year. Immunity that develops after vaccination with crystal violet vaccine is approximately 50% less effective in pigs vaccinated late in winter than in those vaccinated earlier in winter and in the fall.—*Papers from the Pasteur Institute, Bucharest*, 4, (1960): 243 (abstr. in *Die Vet.-med.*, 14, (Jan., 1961): 61).

Helminthiasis of Sheep in Southern Georgia

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FOR 32 MONTHS from 1955 to 1958, I studied the helminths and helminthiasis of sheep and the effectiveness of current control methods in the Coastal Plain Region of Georgia. This report calls attention to the severe ovine helminthiasis seen during this period and to the possible causes of the failure of control methods.

Materials and Methods

The 38 sheep for this study came from 20 southern Georgia farms; however, some had been shipped to these farms from other eastern states and from Texas, New Mexico, and Canada. All sheep were suspected of being affected with clinical parasitism before necropsy. Ten had already died. Determinations of packed cell volumes (PCV) were made on the blood of 25 of those still alive.

At necropsy, the thoracic and abdominal viscera of each sheep were examined. The technique described by Porter² was used for recovering helminths from the gastrointestinal tract. Bacteriologic cultures for other pathogens were also made of the vital organs. The farms of origin were visited and information obtained concerning the history of the sheep, the development and severity of parasitism, and the methods of parasite control.

Results

Helminth parasites recovered from the 38 sheep were recorded (Table 1). The data are separated into three groups according to the severity of the infection. Group 1 included 21 heavily infected sheep; group 2 was made up of 10 sheep with subclinical helminthiasis; and group 3 consisted of 7 feeder lambs (recently shipped from New Mexico and Texas) with subclinical helminthiasis.

Group 1 (Heavily Infected Sheep).—Parasites were recovered from these sheep, and anthelmintic treatments were given (Table 2). Many sheep were emaciated.

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This work was done at Tifton, Ga., in cooperation with the Georgia Coastal Plain Experiment Station.

About half were affected with severe helminthiasis and were moribund or dead when first observed; the other half were in poor condition. The sheep harbored from 1,680 to 44,159 nematode parasites each.

The large stomach worm, *Haemonchus contortus*, was present most commonly and was considered the most pathogenic. Sheep 1, 2, 4, 5, 7, 9, 10, 11, 14, 15, 17, and 20 were severely affected or dead from haemonchosis. These sheep were anemic. In each, the wall of the abomasum was slightly edematous, and there were numerous minute breaks in the mucosa. The emaciated sheep had visceral edema, and excess fluid was present in the peritoneal, pleural, and pericardial cavities. Their fat was gelatinous.

The intestinal hairworm, *Trichostrongylus colubriformis*, was the second most injurious parasite. This species was considered either the primary cause of parasitic disease or the principal contributing factor in sheep 3, 6, 12, 13, 14, 15, 16, 18, and 20. These sheep were thin and emaciated, and the majority had diarrhea.

The thread lungworm, *Dictyocaulus filaria*, apparently contributed to the poor physical condition or death of sheep 14, 15, 18, 19, and 20. The lungs of sheep 18 and 19 were also partially filled with a mucopurulent material.

The nodular worm, *Oesophagostomum columbianum*, probably debilitated sheep 8, 16, and 21. The larvae of this worm produced large nodular lesions in the ileums, cecums, and colons of these sheep. Marked stiffness in the hindquarters of sheep 8 and 21 was observed, which was attributed to adhesions in the abdominal viscera that were associated with nodular worm lesions found at necropsy. No nodular worms were found in the lumen of the large intestine of sheep 21, although the wall of the gut contained numerous nodular worm larvae.

The remaining 19 roundworm species (Table 1) were recovered in small numbers and were considered clinically unimportant.

TABLE 1—Nematode Parasites Recovered at Necropsy from Sheep

Parasite	Severe helminthiasis, group 1 (21 sheep)		Subclinical helminthiasis			
	Sheep infected (No.)	Nematodes recovered (No.)	Group 2 (10 sheep) Sheep infected (No.)	Nematodes recovered (No.)	Group 3 (7 sheep) Sheep infected (No.)	Nematodes recovered (No.)
Esophagus:						
<i>Gongylonema pulchrum</i>	1	2	.....	.....	.....	.....
Lungs:						
<i>Dictyocaulus filaria</i>	15	4-300	.....	.....	.....	.....
Abomasum:						
<i>Haemonchus contortus</i>	21	119-26,170	8	4-1,085	5	2-145
<i>Trichostrongylus axei</i>	11	20-1,870	3	20-1,010	1	10
<i>Ostertagia circumcincta</i>	9	10-1,800	4	60-560	1	90
<i>Ostertagia trifurcata</i>	5	1-160	.....	.....	.....	.....
<i>Ostertagia ostertagi</i>	1	90	1	50	.....	.....
<i>Pseudostertagia bullosa</i>	.....	.....	.....	.....	1	60
Small Intestine:						
<i>Trichostrongylus colubriformis</i>	19	10-27,120	10	60-4,840	3	190-510
<i>Strongyloides papillosus</i>	14	65-5,700	8	30-2,160	2	100-1,040
<i>Cooperia punctata</i>	6	10-4,750	3	60-1,720	2	60-190
<i>Cooperia curticei</i>	12	20-2,200	4	4-160	.....	.....
<i>Trichostrongylus vitrinus</i>	1	600	1	20	.....	.....
<i>Nematodirus spathiger</i>	11	7-320	3	8-240	6	12-728
<i>Cooperia pectinata</i>	2	10-320	1	50	.....	.....
<i>Nematodirus abnormalis</i>	8	20-280	2	11-160	.....	.....
<i>Bunostomum trigonocephalum</i>	2	1-18	.....	.....	.....	.....
<i>Cooperia spatulata</i> (males)	1	7	.....	.....	1	1
<i>Capillaria bovis</i>	1	2	1	1	.....	.....
<i>Trichostrongylus longispicularis</i> (male)	1	1	.....	.....	.....	.....
Large Intestine:						
<i>Oesophagostomum columbianum</i>	20*	1-640	4	2-100	.....	.....
<i>Trichuris</i> sp.	7**	8-20	4	2-8	.....	.....
<i>Chabertia ovina</i>	1	1	.....	.....	.....	.....

*Nodules only in 5 sheep. **No males in 4 sheep; males in 3 sheep identified as *T. ovis*.

Besides nematode parasites, two species of cestodes were recovered. The thin-necked bladder worm, *Cysticercus tenuicollis*, was found in the viscera of 4 sheep. The double-pored tapeworm, *Moniezia expansa*, was found in the intestines of 3 sheep.

Determinations of PCV were made from the blood of 13 sheep which had moderate to heavy infections of *H. contortus*. Ten sheep (1, 4, 5, 7, 10, 11, 13, 14, 17, and 20) had PCV's of less than 15%, sheep 3 had 19%; sheep 18 had 21%; and sheep 21 had 32%. All PCV's values, except that of sheep 21, indicated that anemia, the primary sign of haemonchosis, was present in the affected sheep.

Seventeen sheep from group 1 had been drenched (Table 2) one or more times with phenothiazine. Sheep 7 and 13 had also been given copper sulfate and nicotine sulfate drenches in the three months before necropsy. Sheep 14 and 20 each had 6 phenothiazine treatments; they came from a flock that had been drenched biweekly for about a year. Thirteen of the 17 treated sheep and untreated sheep 9 and 11 had access to phenothiazine in low-level dosage in

mineral mixtures. Sheep 1 and 5 were not medicated.

In a comparison of treated with untreated sheep, it was found that treatment had little or no effect on the incidence or the intensity of nematode infection (Table 2). However, there were more immature stages of *H. contortus* in sheep that were treated with phenothiazine 21 days or less before necropsy. Also, as previously reported,² anomalous spicules occurred more frequently in the adult male large stomach worms that were recently exposed to phenothiazine than in those not so exposed.

Group 2 (Sheep with Subclinical Helminthiasis).—The number of nematode parasites harbored by these sheep ranged from 487 to 7,720. Packed cell volume determinations were made on 7 sheep. Two sheep were anemic as shown by a PCV of 15 and 17%, and 5 had normal PCV's of 31 to 38%. The worms did not appear to be numerous enough to cause the poor physical condition observed. On necropsy, 1 anemic sheep was found to have purulent pneumonia, and another, an unidentified

disease. The remaining 8 sheep had such nonparasitic conditions as internal injuries, encephalomeningitis, muscular dystrophy, staphylococcosis, and undiagnosed conditions. Three of 4 sheep had last been treated with phenothiazine 1 to 14 days before necropsy, and 1 sheep, 120 days before necropsy. However, no differences were observed in the number of worms harbored by the treated and untreated sheep. Three larval tapeworms (*C. tenuicollis*) were recovered from 1 sheep.

Group 3 (Feeder Lambs with Subclinical Helminthiasis).—The lambs harbored from 340 to 1,460 nematode parasites each. Packed cell volume determinations for 5 lambs ranged from 33 to 46% and were considered normal. At necropsy, 4 lambs were found to have coccidiosis¹ and the remaining 3 had undiagnosed nonparasitic diseases. About 25 days before necropsy, 2 lambs had been treated with an unspecified anthelmintic. However, the number of worms did not differ appreciably between treated and untreated animals.

Discussion

From 1954 through 1956, the number of adult sheep in Georgia increased from about 7,000 to 43,000 head. This increase was achieved through importing western ewes, mainly from Texas, and purebred Suffolk and Hampshire rams from eastern states and Canada. Most of the farmers had no previous experience in sheep management. For helminth control, local advisors suggested using pasture rotation, low level administration of phenothiazine in mineral mixtures, and frequent drenching with phenothiazine. Despite these precautions, however, clinical helminthiasis often developed after a year or more and resulted in extensive economic losses. By 1957, helminthiasis was considered to be the principal disease affecting sheep in Georgia.

The present study indicates that at least 55% of the sheep examined were affected by clinical parasitism. Since the principal parasites recovered from the affected sheep were the large stomach worm, *H. contortus*,

TABLE 2—Nematode Parasites Recovered from 21 Severely Parasitized Sheep at Necropsy and Information on Prior Anthelmintic Medication.

No.	Age of sheep	Nematodes recovered						Medication	
		<i>H. contortus</i>	<i>T. colubriformis</i>	<i>D. filaria</i>	<i>Oe. columbianum</i>	Other*	Totals	Drugs	No. treatments prior to 3 mo. before necropsy Days since last treatment
1	4 mo.	6,027	280	.....	2	1,241	7,550	None	.....
2	4 mo.	13,500	.....	.....	.....	460	13,960	Phenothiazine	1 21
3	5 mo.	3,280	20,730	.....	.....	7,191	31,201	Phenothiazine	1 45
4	6 mo.	26,170	2,280	.....	640	1,331	30,421	Phenothiazine	3 35
5	6 mo.	13,158	1,960	8	400	328	15,854	None	.....
6	6 mo.	2,778	23,800	5	1	561	27,145	Phenothiazine	2 14
7	6 mo.	8,443	8,120	12	1	5,895	22,471	Phenothiazine + CN**)	1 58
8	10 mo.	215	1,630	.....	1†	155	2,001	Phenothiazine	2 8
9	2.5 yr.	9,174	10	.....	.....	265	9,449	None	.....
10	3.5 yr.	5,970	350	5	103	8,992	15,420	Phenothiazine	2 15
11	4 yr.	7,990	9,700	19	4	4,430	22,143	None	.....
12	4 yr.	2,022	18,400	69	8	2,061	22,560	Phenothiazine	1 14
13	5 yr.	1,713	20,560	43	9	2,180	24,505	Phenothiazine + CN**)	1 32
14	5 yr.	16,201	27,120	300	46	492	44,159	Phenothiazine	2 30
15	5 yr.	25,000	17,400	141	.....	.....	42,541	Phenothiazine	6 8
16	6 yr.	119	10,460	4	77†	10,320	20,980	Phenothiazine	2 67
17	6 yr.	11,362	720	14	86	867	13,049	Phenothiazine	1 14
18	6 yr.	1,316	10,460	222	18	437	12,453	Phenothiazine	1 63
19	6 yr.	2,313	6,010	120	28	1,830	10,301	Phenothiazine	1 35
20	6 yr.	14,000	11,400	149	.....	6	25,555	Phenothiazine	1 14
21	6 yr.	1,000	.....	8	.....†	672	1,680	Phenothiazine	6 8
Totals:		171,751	191,390	1,119	1,424	49,714	415,398		
Averages:		8,178	10,073	75	95	2,486	19,781		

*Includes other species indicated in Table 1 plus unidentified larvae. **CN = Copper and nicotine sulfate. †Massive infection of nodular worm larvae in intestinal wall.

the intestinal hairworm, *T. colubriformis*, the thread lungworm, *D. filaria*, and the nodular worm, *Oe. columbianum*, it appeared that the control measures used against these parasites, all of which are acquired directly from contaminated pasture, had been inadequate. The finding that sheep recently drenched with phenothiazine harbored large numbers of immature stomach worms suggested that the adult worms of this species may have been removed by the drug but were rapidly replaced by infective larvae acquired from the pasture between the last treatment and necropsy.

This situation may also have been true for the intestinal hairworm; however, this species is generally considered to resist anthelmintic treatment more than the large stomach worm. The thread lungworm is not affected by phenothiazine because it is located outside the host's digestive tract. The nodular worm larvae that are encysted in the intestinal wall are also beyond the reach of phenothiazine. The adult nodular worms, however, which normally live in the lumen of the large intestine, are easily removed by the drug. The presence of only a few adult nodular worms in recently treated sheep further indicated that such action had undoubtedly occurred. Other factors apparently involved in the epizootiology of the clinical parasitism were: (1) the treatment program, in regard to the care with which the doses were administered, was inadequate; and (2) other recommended control measures were carried out with questionable thoroughness, especially during the period before signs of clinical helminthiasis occurred in sheep.

Summary

Parasitologic examinations were made at necropsy on 38 sheep suspected of having clinical parasitism. The sheep came from southern Georgia farms, although some had been imported to Georgia from other states and Canada.

The sheep harbored from 340 to 44,159

nematodes each. The diagnosis of parasitism was confirmed in 21 sheep (55%). The remaining 17 sheep had diseases other than helminthiasis.

Four species were considered as the principal nematodes affecting the sheep that had clinical signs of helminthiasis. These species were *Haemonchus contortus*, *Trichostrongylus colubriformis*, *Dictyocaulus filaria*, and *Oesophagostomum columbianum*.

Other nematode species present were *Gongylonema pulchrum*, *Ostertagia circumcincta*, *Ostertagia trifurcata*, *Ostertagia ostertagi*, *Pseudostertagia bullosa*, *Trichostrongylus axei*, *Trichostrongylus longispicularis*, *Trichostrongylus vitrinus*, *Cooperia curticei*, *Cooperia punctata*, *Cooperia pectinata*, *Cooperia spatulata*, *Nematodirus spathiger*, *Nematodirus abnormalis*, *Strongyloides papillosus*, *Bunostomum trigonocephalum*, *Capillaria bovis*, *Chabertia ovina*, and *Trichuris ovis*.

The larval cestode, *Cysticercus tenuicollis*, was recovered from the viscera of 5 sheep. The double-pored tapeworm, *Moniezia expansa*, was found in the intestines of 3 sheep.

This study indicated that the increase in ovine helminthiasis in the area and the resultant economic losses were caused by: (1) failure of the farmer to follow accepted management practices and routine treatment for preventing or reducing parasitic infection; (2) resistance of some parasite species to available drugs; and (3) heavy pasture contamination with the eggs and larvae of the parasites.

References

- ¹Becklund, W. W.: An Epizootic of Coccidiosis in Western Feeder Lambs in Georgia. *North Am. Vet.*, 38, (1957): 262-264.
- ²Becklund, W. W.: Morphological Anomalies in Male *Haemonchus contortus* (Rudolphi, 1803) Cobb, 1898 (*Nematoda:Trichostrongylidae*) from Sheep. *Proc. Helminthol. Soc. Washington*, 27, (1960): 194-199.
- ³Porter, D. A.: Incidence of Gastrointestinal Nematodes of Cattle in the Southeastern United States. *Am. J. Vet. Res.*, 3, (July, 1942): 304-307.

Equine Anesthesia—Maintenance by Inhalation Techniques

E. Wynn Jones, Ph.D., M.R.C.V.S.

THE ABILITY to perform successful surgical operations in the horse necessitates induction and maintenance of efficient anesthesia. Such anesthesia should provide maximum safety, ease of induction and maintenance, adequate relaxation, and early recovery without struggling.

Intravenous anesthetics are usually economical and provide rapid, smooth induction with a minimum of equipment.⁶ They are less desirable for the maintenance of anesthesia especially during long surgical procedures. The administration of maintenance doses of intravenous anesthetics causes saturation of the tissues with anesthetic and a prolonged recovery period often characterized by struggling. Many intravenous anesthetics depress respiration, and they do not permit easy variation of the anesthetic depth.

Alternatively, inhalation anesthetics are usually unsatisfactory for induction of anesthesia, but do provide minimal respiratory depression, easily varied depth of anesthesia, rapid recovery, and usually a wide margin of safety. The disadvantages of inhalation anesthetics have been described previously. It, therefore, seems desirable to select an intravenous anesthetic for induction and an inhalation anesthetic for maintenance of anesthesia during all but the shortest surgical procedures.

Induction

Satisfactory induction is achieved by the rapid injection of thiopental sodium,* pentobarbital sodium,* a pentobarbital-

thiopental mixture,⁶ or thialbarbitone sodium.**

The value of the preanesthetic sedation, used in this rapid induction technique, cannot be overemphasized since it reduces or abolishes induction and emergence excitement, facilitates the maintenance of an even degree of anesthesia, reduces the amount of anesthetic required, and increases the margin of safety.⁶ In fact, intravenous barbiturates should not be used in the horse without preanesthetic sedation. We prefer promazine hydrochloride (0.25 mg./lb., intravenously).

Maintenance

General.—Once general anesthesia is induced, ether, halothane,† cyclopropane, or nitrous oxide are used to maintain anesthesia. The administration of these agents requires special equipment to permit complete, partial rebreathing, or nonrebreathing techniques. If sufficient oxygen is added to supply the body's needs and exhaled carbon dioxide is absorbed, the same mixture of gases can be used repeatedly as it is exhaled.

In anesthesia in man, the completely closed circuit is being used with decreasing frequency.⁷ Instead, a partially closed system is used with a higher rate of gas flow, part of the gases being exhaled to the exterior. Such a system reduces the possibility of carbon dioxide accumulation, permits excretion of nitrogen to the atmosphere, and insures a gas mixture of constant composition; it requires more gas than it is

*Pentothal Sodium, Combuthal, and Nembutal, respectively, Abbott Laboratories, North Chicago, Ill.

**Kemithal and †Halsan, Fort Dodge Laboratories, Fort Dodge, Iowa.

From the College of Veterinary Medicine, Oklahoma State University, Stillwater.

usually economical to use in large animal anesthesia. In order to conserve both anesthetic and oxygen, only rebreathing techniques are used for large animal anesthesia. The basic equipment for such a technique includes cylinders of oxygen and anesthetic gas, a vaporizer, carbon dioxide absorber, a rebreathing bag, a mask and an endotracheal tube, suitable connections and hoses, and an exhalation valve.

Gas Supply.—The oxygen supply should be adequate for the probable duration of anesthesia plus any emergency which may arise. We find that a size D or E oxygen cylinder is sufficient for most operations, if a closed system is used. With this technique, it is, of course, only necessary to supply sufficient oxygen to replace that utilized by the animal and that lost by leaks. This rarely amounts to more than 5 liters of oxygen per minute; in the average horse the basal oxygen requirement usually ranges between 2 and 4 liters per minute. For such a system a flowmeter graduated from 0 to 15 liters per minute is adequate. A similar size of cylinder and flowmeter is satisfactory for nitrous oxide, when this is used as an anesthetic. Nitrous oxide is usually mixed with oxygen in the proportion of 1 or 2 parts of nitrous oxide to 1 of oxygen. When cyclopropane is used, a flowmeter calibrated to measure 0 to 5 liters per minute is required.

Vaporization.—A vaporizer is only required when ether, halothane, or other anesthetic vapors are used. Vaporizers can be classified as bubble, inhaler, and drip types.

In the bubble type, the gases flow through or over the liquid to be vaporized. An adjustable control is incorporated so that all or part of the gases may bypass the anesthetic chamber. To insure maximum vaporization, the bubbles should be as small as possible and should pass through the liquid for as great a distance as possible. A full vaporizer, therefore, will be more effective than one which is almost empty. The degree of vaporization depends also upon the rate of flow of the gas and the temperature of the liquid.⁶ Anesthetic stored at refrigeration temperature and used immediately will evaporate less rapidly than anesthetic at room temperature. Vaporization results in evaporative cooling of the liquid; this fall in temperature decreases the concentration of vapor obtained.⁶ The large gas flow and the exces-

sive evaporative cooling, together with decreased concentration of anesthetic vapor, have long been major factors in the difficulties associated with the use of ether in large animal anesthesia. It is, therefore, desirable to improve the heat exchange between the ether and its surroundings as much as possible. Some workers have used heating devices to maintain the temperature and, therefore, the vapor concentration of the ether.⁴ These are often unsatisfactory since it is hazardous to use electrical equipment in the presence of ether, and water is a poor conductor of heat.

The inhaler type is sometimes called a "draw over" vaporizer because the animal breathes or inhales through it. Therefore, it is essential that such a unit should offer minimum resistance to breathing. The evaporative surface of the anesthetic is increased in some units by the use of a wick kept moist by the liquid ether, and vaporization is thus improved. The inhaler vaporizer is useful in closed-circuit systems where the basal gas flow is too small for adequate vaporization of the anesthetic. In such a system, the entire respiratory minute volume can be utilized to evaporate the anesthetic. The bubble vaporizer is unsuitable for this use because it may cause too much resistance to respiration.

In the drip-type vaporizer an adjustable feed permits the anesthetic to drop into a chamber through which the animal breathes.³ The rate of dropping should be precisely controlled and easily visible. In order to obtain exact control of the concentration of anesthetic vapor administered, intricate vaporizers incorporating various type of thermostats have been designed. Such vaporizers are especially desirable when extremely potent anesthetics, such as halothane, are used. Their value is, however, reduced when they are used in a rebreathing system.

Carbon Dioxide Absorption.—In any system in which rebreathing occurs for more than a few minutes, it is necessary to remove the carbon dioxide which accumulates. Either sodalime or baralyme is used to absorb the carbon dioxide. Sodalime is a mixture of 90% calcium hydroxide with 5% sodium hydroxide with silicates to prevent powdering. Baralyme is 80% calcium hydroxide with 20% barium hydroxide. Baralyme is less caustic and produces less heat than sodalime.⁷

Most preparations of either sodalime or baralyme now contain an indicator which changes color when the absorptive capacity is depleted. Exhaustion of the sodalime or baralyme and, therefore, accumulation of carbon dioxide, is indicated clinically by a rise in blood pressure followed eventually by a fall, an accelerated pulse, increased respiratory depth, and increased capillary oozing from the surgical site.⁷

To provide maximum efficiency of absorption with minimal resistance, the absorbent should be granular and vary in mesh size from 4 to 8; air space within and between the granules of absorbent should not be less than the animal's tidal volume.⁷ The air space in a pound of 4- to 8-mesh absorbent is approximately 400 cc. Observation concerning the tidal volume of the average race horse indicates that this varies between 2 to 5 liters in the resting animal. Therefore, it is essential that the absorber should contain at least 10 lb. of absorbent. One investigator reports that the tidal air never exceeded 4.5 liters in the anesthetized horse.² In 7 horses (average weight, 1,075 lb.), we observed a mean tidal volume of 3.35 liters (range 1.7 to 5.8, s.d. 1.22). If the tidal volume exceeds the air space of the canister, the efficiency of absorption decreases. At present we use a 12-lb. canister, although units which contain as much as 20 lb. have been reported.³ To aid heat dissipation, the canister should be of metal construction. For maximum efficiency, the canister should be cylindrical, the length being 1.5 times the diameter.¹

Rebreathing Bags.—During each respiration, a volume of gas equivalent to the tidal volume passes to and from the anesthetic equipment. It is, therefore, necessary to have a reservoir which will accommodate these sudden fluctuations in volume with the minimum change of pressure within the system. A rubber bag is used for this purpose. Sizes varying from 20 to 60 liters in capacity are used in equine anesthetic equipment.^{2,3,11,12} A 30-liter bag is desirable for the average race horse in order to accommodate the marked fluctuations in the respiratory depth which may occur under barbiturate anesthesia. A smaller bag is more satisfactory for young thoroughbreds and ponies. The bag should be molded from conductive rubber to permit dispersal of static electricity and thereby to minimize explosion hazards. An additional opening

at the bottom of the bag is desirable to permit the drainage of any fluids or dust which may accumulate in the bag.

Requirement for Assuring Adequate Airways.—The anesthetic mask should be light, easily applied, provide an airtight fit over the face, not include the eyes, and have a minimum of excess space within it. An adjustable exhalation valve to permit variation of the degree of rebreathing should be fitted to the mask or to the mask adapter. The latter position is preferable for the valve can then be used in conjunction with an endotracheal tube. Endotracheal tubes varying from 1/2 to 1 1/2 inches in diameter and from 20 to 30 inches long are required.^{5,10} During use, negative and positive pressures develop alternately within the anesthetic mask. The magnitude of these pressure fluctuations varies depending on the ease with which the gases pass through the system. Resistance raises these pressures in negative, positive, or both phases of respiration. The factors which influence resistance to breathing include the size of apertures between masks, canisters, breathing bags, and endotracheal tubes; size and shape of canisters; length and type of connecting tubing; nature of valves; and size of absorbent granules. Apertures should be as wide as possible and under no circumstances smaller than the diameter of the trachea.⁹ The use of equipment with minimum apertures, the diameter of which varies from 2.5 to 5.0 cm., is reported.^{2,3,12} Our present equipment has apertures with a minimum diameter of 5.1 cm. The use of excessively long hoses between the mask and canister increases frictional resistance. Four-foot lengths have so far been satisfactory. All tubing should, like the breathing bag, be constructed of conductive material to reduce explosion hazards from static electricity.

Rebreathing Systems.—The equipment so far described may be assembled in a "to-and-fro" or "circle system." The to-and-fro system consists of a mask separated from the rebreathing bag by a canister of sodalime. Gases pass through the canister both during inspiration and expiration. Fresh gases, with or without anesthetic vapor, are fed to the horse close to the mask. Although this apparatus is comparatively simple, it has the disadvantage that the canister must be as close to the mask as possible in order to reduce the rebreath-

ing of air from which carbon dioxide has not been removed. This, in the case of the large animal especially, makes the equipment cumbersome, and heat generated by the absorption of carbon dioxide may cause an undesirable increase in the temperature within the mask. An additional objection is the difficulty encountered in incorporating an inhaler-type vaporizer in such a circuit. As a result, vaporization frequently must depend upon the basal gas flow. Vaporization under such conditions is often inadequate to maintain anesthesia of the large animal. Large animal to-and-fro systems have been described.^{8,11}

such a system, the dead space or space occupied by gases not freed of carbon dioxide can be reduced to a minimum. In addition, all equipment excluding the mask and connecting hoses can be moved a short distance from the horse and assembled on a convenient stand. An inhaler-type vaporizer in which the gases are passed over or through the anesthetic can be used.

After leaving the mask, the exhaled gases pass directly to the absorber; the vaporizer is commonly incorporated on the inhalation side. Alternatively, a vaporizer may be incorporated in the basal gas flow line.² In the unit* in use at this institution (Fig. 1),

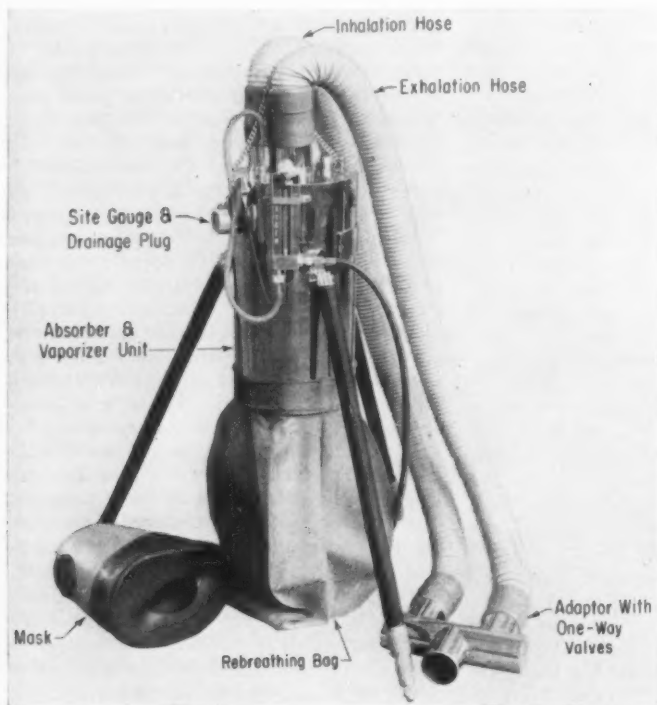


Fig. 1—Circle-type gas machine for large animals.

In the circle or two-phase system, an inspiratory and an expiratory tube are used between the mask and the remainder of the equipment. Flap or other suitable valves are used to insure a one-way flow of gas. The only air rebreathed without removal of the carbon dioxide is that within the mask and the adapter joining the expiratory and inspiratory hoses to the mask. In

the exhaled gas passes through the expiratory hose and through the absorber to the rebreathing bag; from here, it passes through or around the vaporizer and back to the mask via the inspiratory hose. Additional gases are added to the circuit via

*Supplied by the National Cylinder Gas, Division of Chemetron Corporation, Chicago, Ill.

a connection into the vaporizer. The flow of these gases may be varied to bubble through the anesthetic or to bypass the vaporizer chamber. Anesthetic depth is varied by adjusting the amount of inhaled gases which pass through or bypass the vaporizer. The basal gas flow is only bubbled through the anesthetic when the equipment is used for induction of anesthesia. Halothane is used by incorporating a bubble-type or other suitable vaporizer within the basal gas flow line.

Technique of Application

As soon as anesthesia is induced, a mask is applied over the upper and lower jaw or an endotracheal tube inserted into the trachea and its cuff inflated. The maximum flow of oxygen is used until the rebreathing bag is half inflated, then the flow rate is adjusted to 2 to 4 liters per minute depending upon the size of the horse. The mask is attached to the inhalation and exhalation hose and the vaporizer (previously filled with 1 lb. of ether) set to permit all inhaled gases to pass through. As soon as it is obvious that the ether is maintaining or increasing the degree of anesthesia, the vaporizer control is reset so that the majority of the inhaled gases bypass the ether chamber.

Such a setting, with but a minimum of adjustment, is usually sufficient to maintain a moderate degree of inflation of the rebreathing bag. The capacity of the rebreathing bag may be varied according to the size of the horse by varying its position upon the absorber. Minimal adjustment only is necessary once the machine is set. The fact that the amount of ether vaporized is related to the respiratory minute volume helps to stabilize the depth of anesthesia. Anesthesia has been maintained in this way on over 50 occasions and for periods varying from a few minutes up to three and a half hours. One death has occurred under this anesthesia during an attempt to correct an intestinal obstruction. Death was attributed to surgical shock.

By incorporating a suitable vaporizer in the basal gas line, halothane has also been used to maintain anesthesia. In this way, it has been found possible to reduce the amount of halothane required to 30 to 40 cc. per hour of surgical anesthesia. In addition to the obvious advantage of its non-

explosive characteristics, observations indicate the duration of the recovery period is less with halothane than ether. Likewise, nitrous oxide and cyclopropane have been used within this circle system. Too few horses have been studied to warrant any definite conclusions. The use of nitrous oxide in combination with halothane in both horses and cattle has been reported.¹² One investigator does not recommend nitrous oxide in the horse because evidence of circulatory shock was apparent during the recovery period.

As soon as the operation is completed, the vaporizer is turned off. The mask may be removed if desired, or the administration of oxygen may be continued. After all equipment has been removed, the horse is permitted to lie quietly and unrestrained until it is able to regain its feet. Depending upon the duration of surgical anesthesia and the inhalation anesthetic used, this varies between 15 minutes and two and a half hours.

References

- ¹Evans, Francis T., and Gray, T. Cecil: *General Anesthesia*, Vol. I Basic Principles. Butterworth and Co. Ltd., London, England (1959): 524.
- ²Fisher, Edward W., and Jennings, Sydney: A Closed Circuit Anesthetic Apparatus for Adult Cattle and for Horses. *Vet. Rec.*, 69, (1957): 769-771.
- ³Hansson, C. H., and Johannisson, D.: Inhalation Anesthesia with Automatic Artificial Respiration During Succinylcholine Relaxation in Large Animals. *Nord. Vet.-med.*, 10, (1958): 469.
- ⁴Henkels, P.: The Best Method of Anesthesia for the Horse, Both for Use in Clinics and General Practice. *Deutsche, tierärztl. Wchnschr.*, 46, (1938): 801 (Abstr. in *Vet. Rec.*, 51, (Aug. 1939): 980).
- ⁵Jones, E. Wynn: The Administration of General Anesthetics to the Horse and Ox. *J.A.V.M.A.*, 127, (Dec., 1955): 484-488.
- ⁶Jones, E. Wynn, Johnson, L., and Heinze, D. D.: Thiopental Sodium Anesthesia in the Horse—A Rapid Induction Technique. *J.A.V.M.A.*, 137, (July 15, 1960): 119-122.
- ⁷Lee, J. Alfred: *A Synopsis of Anesthesia*. 4th ed. Williams and Wilkins Co., Baltimore, Md. (1959): 124.
- ⁸Loguidice, C. N., and Aranes, G. M.: *La Anestesia por Gases en los Animales Domesticos*. Universidad Nacional de la Plata, Facultad de Medicina Veterinaria, 1946.
- ⁹MacIntosh, Robert, Mushin, William W., and Epstein, H. G.: *Physics for the Anaesthetist Including a Section on Explosions*. 2nd ed. Blackwell Scientific Publications, Oxford, England (1958): 26, 156.
- ¹⁰Messervy, A., and Jones, E. Wynn: Endotracheal Intubation in Cattle. *Vet. Rec.*, 68, (1956): 32.
- ¹¹Reed, W. C., Allen, C., Glasser, M. E., and

Keefe, E. R.: An Apparatus for Administration of Ether Anesthesia in Horses. Vet. Med., 52, (1957): 474-476.

²²Weaver, B. M. Q.: An Apparatus for Inhalation Anesthesia in Large Animals. Vet. Rec., 72, (1960): 1121.

A Method of Inducing *Salmonella typhimurium* Infection in Chicks

Bert W. Bierer, V.M.D.

FATAL INFECTIONS with *Salmonella pullorum* and *Salmonella gallinarum* are readily induced in 1-day-old chicks and poults by *per os* inoculation, especially when chicks and poults are chilled by lowering brooder temperatures. Day-old chicks are also susceptible to fatal *Salmonella typhimurium* infection by *per os* exposure, but they do not develop clinical signs of illness, confusing experimental evaluation of drugs known to be active against the salmonelloses.

In an effort to produce clinical *S. typhimurium* infection in chicks, incubator contamination was attempted. As controls, 40 chicks were removed from an incubator containing 400 eggs in the process of hatching. Remaining chicks and eggs were sprayed with 100 cc. of 24-hour-old broth culture of *S. typhimurium*. This was one day before hatching was completed.

After hatching, 200 exposed chicks and 40 control chicks were arranged according to an experimental design (Table 1). Half of the uninfected controls and half the exposed chicks were placed in unheated battery brooders, within which the temperature fluctuated between 71 and 89 F. during the ten-day period of the experiment. Remaining chicks were exposed to 95 F.

From the South Carolina Agricultural Experiment Station, Columbia. Technical contribution No. 370; published with permission of the director.

TABLE 1—Mortality and Necropsy Results of Chicks Experimentally Infected with *Salmonella typhimurium*

Battery cage	No. chicks	Exposure status	Mortality to 10th day	No. died with cecal lesions**
1	20	Uninfected, no stress	1	0
2	20	Uninfected, stress*	0	0
3	50	Infected, no stress	8	8
4	50	Infected, no stress	7	6
5	50	Infected, stress	24	16
6	50	Infected, stress	18	9

*Means of stress was lack of brooder heat. **Cheesy matter or cheesy plugs.

Results are given (Table 1). None of the uninfected chicks in the unheated brooder died, indicating that the lack of heat alone was not adequate for mortality. A mortality occurred in all infected groups but was about three times greater in infected groups in unheated brooders.

Necropsy results revealed that a navel route of infection was established by the incubator-spray inoculation. Using a simple sterile loop to culture livers and unabsorbed yolks, *S. typhimurium* was recovered from 79% of the cultures. Unabsorbed yolks were observed in all birds that died; cecal plugs or cheesy matter, in 68% of birds that died during the ten-day period. In general, body weights of infected groups were less than uninfected groups.

COUNCIL REPORT

AVMA Council on Veterinary Service

Report of Panel on Canine Hip Dysplasia

On March 3, 1961, a panel of ten veterinarians recognized as being knowledgeable on the subject of canine hip dysplasia met in the AVMA office. The panel was asked to consider hip dysplasia from the standpoint of: radiologic equipment and evaluation; positioning, anesthesia, and restraint; normal hips; and diagnosis and classification of dysplastic hips.

The following material is an adaptation of the panel report accepted by the Council on Veterinary Service on March 27-28, 1961, and by the AVMA House of Delegates on Aug. 19-20, 1961.

Safety for Personnel and Animal

Radiography offers little danger either to personnel or the animal being radiographed if routine safety measures are followed. It can be hazardous due to radiation and physical injury if precautions are not observed.

Physical Injury to Patient and Personnel

For ease of handling and positioning for diagnostic radiographs, it is recommended that the animal be anesthetized or tranquilized. The use of short-acting barbiturates (thiopental sodium and thiamylal sodium) and tranquilizers present little risk if the animals are suitably prepared and handled. Chemical restraint allows the animal to be tied and radiographed in an extended position without the assistance of

personnel. Animals may be held if personnel are available and properly protected.

Radiologic Equipment

An x-ray machine should have a minimum capacity of 85 to 90 kv. and 100 ma. It is strongly recommended that higher milliamperage capacity equipment (100 ma.) be used, however, because it allows for shorter exposure times and lessens the chance for distortion resulting from movement. Use of a grid is strongly recommended. The use of intensifying screens and high-speed film will also shorten exposure time. It is urgent that all equipment be in safe working order and possess a collimating device to limit size of the radiation field.

The radiograph should be of sufficient

size to include the entire pelvis and enough of the femurs to indicate that the dog was positioned properly. A 10 by 12-inch film is recommended as a minimum. The radiograph should be marked clearly in order that reference to the veterinarian's records will enable the animal to be identified accurately.

Position for Radiography

The ventrodorsal position is preferred. The pelvis must be centered over the cassette. The dog should be placed on its back. The legs are grasped at the hock and pulled straight backward so that both the stifle and hock joints are fully extended. The legs should be parallel, not overly adducted, and rotated medially with the patellas dorsally over the midline of the femurs. This forces the femoral head into the acetabulum as far as it will go and allows a true profile view of the femoral head and neck.

Symmetry of pelvic positioning is extremely important. Without a symmetrical radiograph, it is impossible to evaluate, with a desirable degree of accuracy, minimal distortions associated with the disease. In fact, asymmetrical radiographs may simulate unilateral dysplasia. To determine whether the pelvis was symmetrical when the radiograph was taken, one should examine the image of the obturator foramina to see if both have the same contour. The wings of the iliums should have like contours. If asymmetry is present, the obturator foramen on the side nearest the cassette will appear larger than its counterpart. The wing of the ilium on the side nearest the cassette will appear narrower than the opposite side. The sacro-iliac articulations should be of equal width. An important fact is that the acetabulum on the side nearest the cassette will appear deeper than it really is and the opposite acetabulum will appear more shallow than it is. For this reason, evaluation of the acetabulums becomes hazardous.

As the femurs are rotated outward, the angle formed by the neck and diaphysis appears to become more obtuse and a less satisfactory view of the femoral head is obtained. Here, as in the case of the acetabulum, illusions due to asymmetrical positioning make accurate evaluation difficult if not impossible.

The Normal Hip

Radiographically, a normal hip is one so constructed that it will function normally. There should be no evidence of abnormal wear, pathologic remodeling,* or degenerative joint disease during a reasonable life span.

The acetabulum should be a semicircle sufficiently deep so that the femoral head can perform its revolving movements without migrating from its normal position. The acetabulums should be bilaterally symmetrical and free of signs of degenerative joint disease.

The femoral head should be hemispherical and fit well into the acetabulum. It should be smooth and rounded, with the normal fovea appearing as a flattened area on its central portion. Except for the flattened fovea the joint space between the head and acetabulum should be even. There should be no evidence of coxa plana,** coxa vara,† or coxa magna‡ (differentiated from changes due to age). The femoral heads should be bilaterally symmetrical.

Several breeds have normal pelvic differences. The Basset Hound has an acetabulum more elliptical than spherical. The Pug has a cranial projection resembling a spur. The pelvis of the Bulldog has a normal cranial half but appears poorly developed caudal to the acetabulum. There are other deviations in other breeds.

The criteria and methods devised for evaluating the human hip are not all readily transferable to the canine hip.

Hip Dysplasia

Hip dysplasia is abnormal development of the hip joint. In general, in a dysplastic hip, the acetabulum is less concave and

*Remodeling, as used in this report, refers to the events that produce degenerative joint disease. Thus, in some areas, there is excessive wear and bone loss; in other areas, bone appears in abnormal amounts (osteophytosis). Figure 15 illustrates this. The fovea and articulating surfaces not in wear become thickened. Osteoarthritis and degenerative joint disease are synonymous and are in part the result of remodeling.

**Coxa plana—osteochondrosis (aseptic necrosis) of the capital epiphysis.

†Coxa vara—a decrease or loss of the angle formed by the head and neck of the femur and the axis of the shaft.

‡Coxa magna—enlargement of the femoral head and neck.



Fig. 1—Ventrodorsal radiograph of a crossbred German Shepherd Dog, spayed female, 3 years old, weighing 66 lb. Position is acceptable and the shape and depth of the hip joints are within normal limits.

more shallow than normal. One of the mechanisms involved may be either a loss or lack of development of a proper acetabular rim. This loss is seen most easily in the region of the cranial rim. The acetabulum does not form a deep semicircle for housing a rounded femoral head.

The femoral head is flattened and does not fit closely into the acetabulum. As the disease progresses, this may result in subluxation or luxation. The hip joint space may be irregular in width.

Special examination techniques may be used to demonstrate subluxation. The dog may be placed in the ventrodorsal position and firm lateral pressure placed over the medial aspect of the femur to demonstrate the capacity to subluxate.

Young animals have a greater amount of cartilage; therefore, it may be difficult, physically or radiographically, to differentiate between dysplasia and normalcy during the early growth period.

Secondary changes associated with hip dysplasia are those of degenerative joint disease aggravated by repeated trauma. In the acetabulum, this may be manifest as subchondral eburnation, seen especially where the femoral head exerts pressure against the cranial acetabular wall. Hypertrophic bone spurs may form at the margin of the acetabulum and are seen on the cranial margin at the site of joint capsule attachment to the ilium.

The degenerative changes of the femoral head and neck are manifest as subchondral eburnation; hypertrophic bone spur formation about the capital epiphyseal line and joint capsule attachment; an apparent femoral neck widening as the head becomes relatively smaller; and an actual neck widening as hypertrophic bone changes occur, especially on the cranial surface of the neck.

Differential Diagnosis

The radiographic signs of secondary degenerative joint disease may occur following several forms of hip disease and mask the diagnostic primary signs. The following changes should be considered in differential diagnosis: (1) aseptic necrosis (spontaneous or traumatic); (2) traumatic dislocations; (3) fractures; and (4) apparent subluxations due to such clinical procedures as positioning. The latter is extremely com-

mon and very important in differential diagnosis.

In improper positioning, with femurs in abduction, the femoral heads may appear to be deeply seated in the acetabulums and abnormal hips may thus appear to be normal.

Radiographic vs. Clinical Appearance

If there are signs of hip lameness in an animal, a radiograph of the pelvis should be taken. There is frequently little correlation between the degree of hip dysplasia and the clinical signs.

Radiographic Appearance vs. Clinical Diagnosis

It is difficult to make a prognosis from the radiograph alone. Frequently the degree of clinical disease either exceeds or is less than expected from the radiographic appearance. The extremes are (1) the pup with only slight radiographic change but severe lameness and (2) the old dog with well-advanced disease and extensive secondary degenerative joint disease but with a lameness that is only slight or barely perceptible. There is no way to predict that a pup only slightly affected will not become more seriously debilitated or that a debilitated pup might not improve with time and the condition become stabilized.

The radiographic criteria for normal and dysplastic hips have been given, but the only way one may gain a working knowledge of the subject is to study radiographs of both types in order to develop a satisfactory subjective image of the hip in health and disease.

Age of the Patient

Severe hip dysplasia may be diagnosed at the age of 10 to 12 weeks by clinical examination and by radiography, but in less severe cases often it is 6 to 12 months before a positive evaluation can be given.

The current system of grading, devised by Schnelle (1954), reflects only the extent of disease as seen radiographically. This grading does not necessarily reflect the clinical appearance of the dog, nor is it



Fig. 2—Ventrordorsal radiograph of a male Bassett Hound, 2 years old, weighing 54 lb. Position is acceptable and the shape and depth of the hip joints are within normal limits. The pelvis was tilted slightly during radiography, as evidenced by absence of the right sacroiliac space and variance in size and shape of the obturator foramen. The left femoral head appears to be more deeply within the socket than the right—a projection illusion.



Fig. 3—Ventrordorsal radiograph of a male German Shepherd Dog, 3½ years old, weighing 66 lb. Position is acceptable and the shape and depth of the hip joints are within normal limits.



Fig. 4—Ventrodorsal radiograph of a female Greyhound, 3 years old, weighing 55 lb. Position is acceptable and the shape and depth of the hip joints are within normal limits.

known to have any relation to the probability of genetic transmission. Grading should be used only by veterinarians as a means of communication when a case is discussed among colleagues.

Grade I—The minimum deviation from normal allowing a diagnosis of hip dysplasia.

Grade II—Obvious and marked deviation from normal.

Grade III—Subluxation of the joint due to dysplasia rather than to trauma.

Grade IV—Flat acetabulum, without either elliptical or circular form, and dislocation of the femoral head.

The Problem

Hip dysplasia is generally accepted as being of genetic origin. Studies by Schales (1956, 1957) and Olsson (1959) tend to support this premise.

All radiographs are the property of the veterinarian or the hospital. The owner should either be given a written statement of the dog's condition at the time the radiograph was made, or else opinion should be withheld until a specific diagnosis can be obtained.

Certainly until full understanding of hip dysplasia has been achieved, it should be regarded as a disease causing unsoundness,

and breeders of dogs should be advised not to use for breeding purposes animals so afflicted, even though the dogs involved may have compensated for the unsoundness.

Conclusion

The Council on Veterinary Services, in appointing this consulting panel on canine hip dysplasia, recognized that a full discussion of this subject would not be possible at once. Therefore, the panel was instructed to consider minimum standards and to produce an initial report designed to help veterinarians render better service to owners of affected dogs.

This report will be subjected to periodic review based on the further research definitely needed in both animals and man. The nature of hip dysplasia is not completely understood, and hope for eliminating the disease lies in a better understanding of the problem. Additional reports will be made for both the profession and the public as newer knowledge becomes available.

K. WHITTINGTON, <i>Chmn.</i>	E. F. LEONARD
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W. D. CARLSON	W. H. RHODES
B. F. HOERLEIN	W. H. RISER
P. W. HUSTED	G. B. SCHNELLE



Fig. 5—Ventrordorsal radiograph of a male German Shepherd Dog, 10 months old. Position is acceptable and the hip joints are reasonably normal in shape and depth. Some knowledgeable examiners have questioned whether the left femoral head is as deep-seated as it should be, but a radiograph (not shown) of the pelvis taken 11 months later, after the dog had completed sentry dog training, is considered to be within normal limits. This radiograph illustrates the difficulty in correctly evaluating a radiograph that varies only slightly from normal.

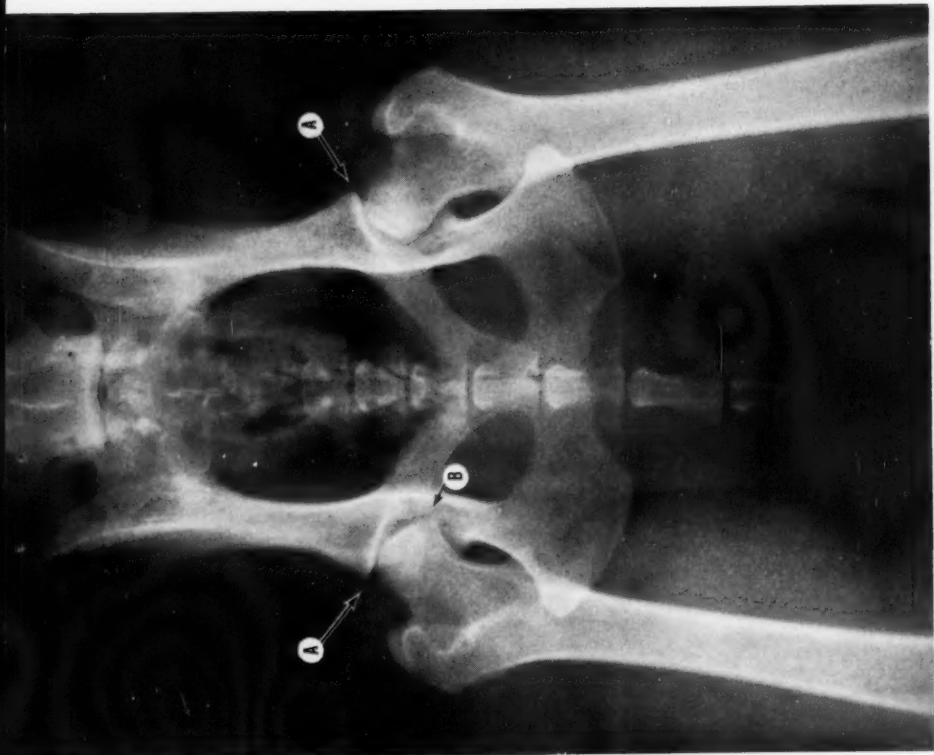


Fig. 6—Ventrordorsal radiograph of a female German Shepherd Dog, 2 years old. Position is acceptable and there is a slight dysplasia. Notice that the cranial rims of the acetabulums are rounded from wear (A) and that the shape of the right femoral head (B) has remodeled slightly (compare with Figure 2).

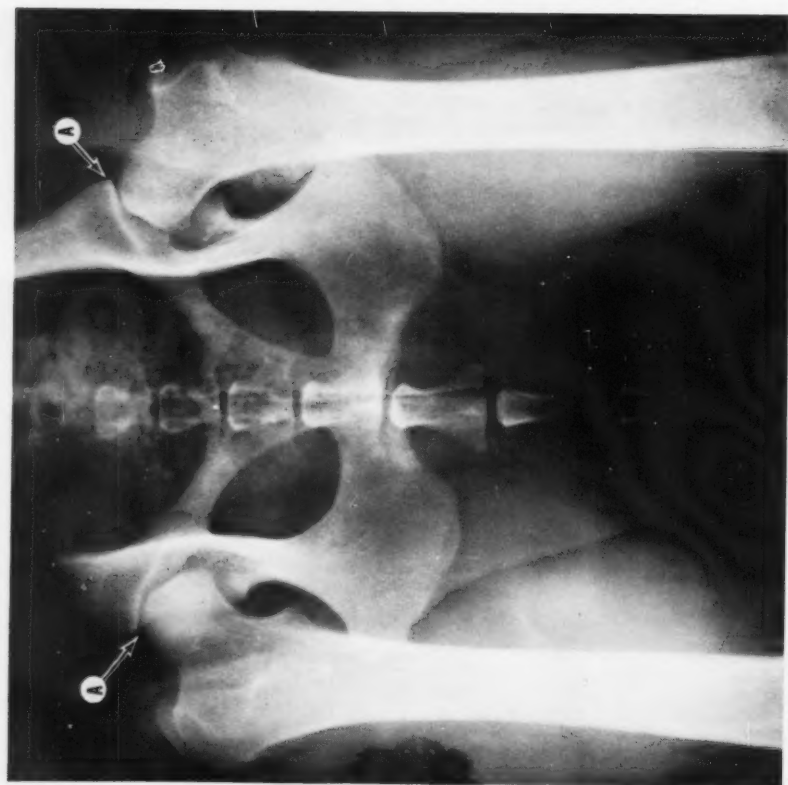


Fig. 7—Ventral-dorsal radiograph of a female German Shepherd Dog, 2 years old, weighing 60 lb. Position is acceptable and dysplasia is evident because of the large and shallow acetabulums, with increased radiopacity of the rims. Also notice the rounded acetabular rims (A). The femoral heads also project laterally.

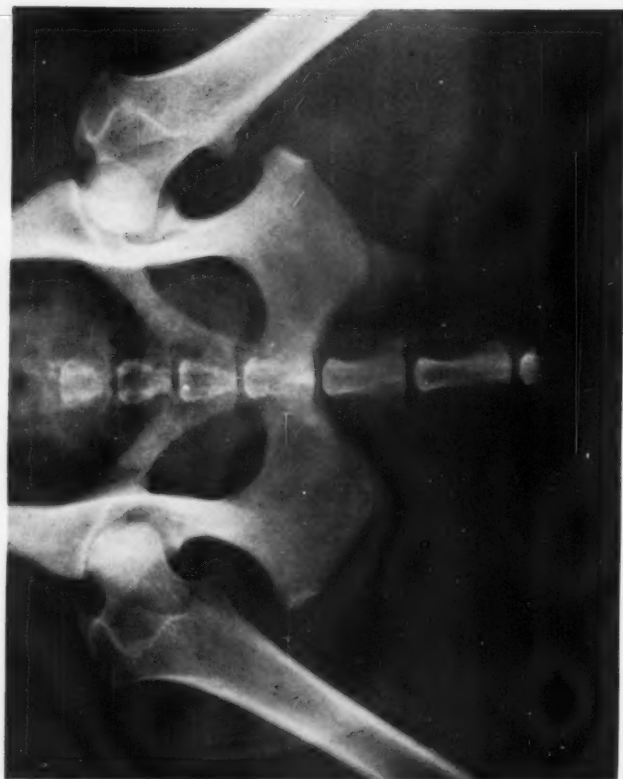


Fig. 8—Ventral-dorsal radiograph of the same dog shown in Figure 7. Radiograph was taken at the same time and with position and x-ray machine setting same as for Figure 7, but because the legs were in abduction the hip joints appear to be relatively normal.



Fig. 9—Ventral-dorsal radiograph of a male German Shepherd Dog, 7 months old, weighing 37 lb. Position is acceptable and hip dysplasia is present, but the dog is young and remodeling changes are minimal.

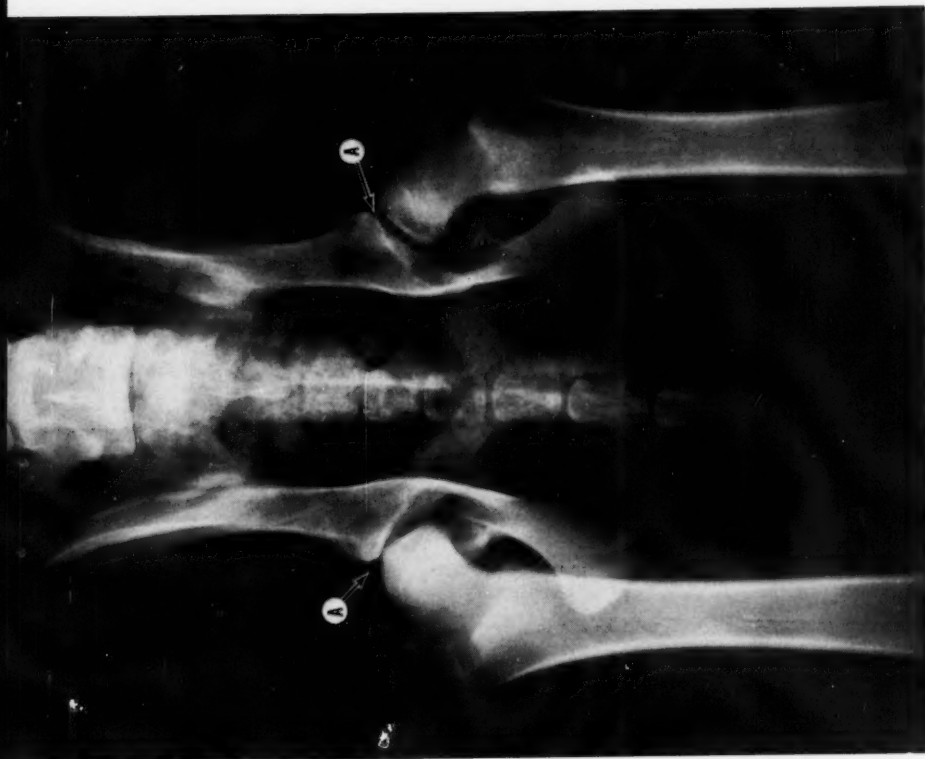


Fig. 10—Ventral-dorsal radiograph of a male German Shepherd Dog, 7 months old, weighing 38 lb., and a littermate of the dog shown in Figure 11. Position is acceptable and hips are dysplastic. The remodeling changes of the acetabulum and the subluxation are marked for the dog's age. Notice the increase in density and the thickness at the cranial acetabular rims (A).

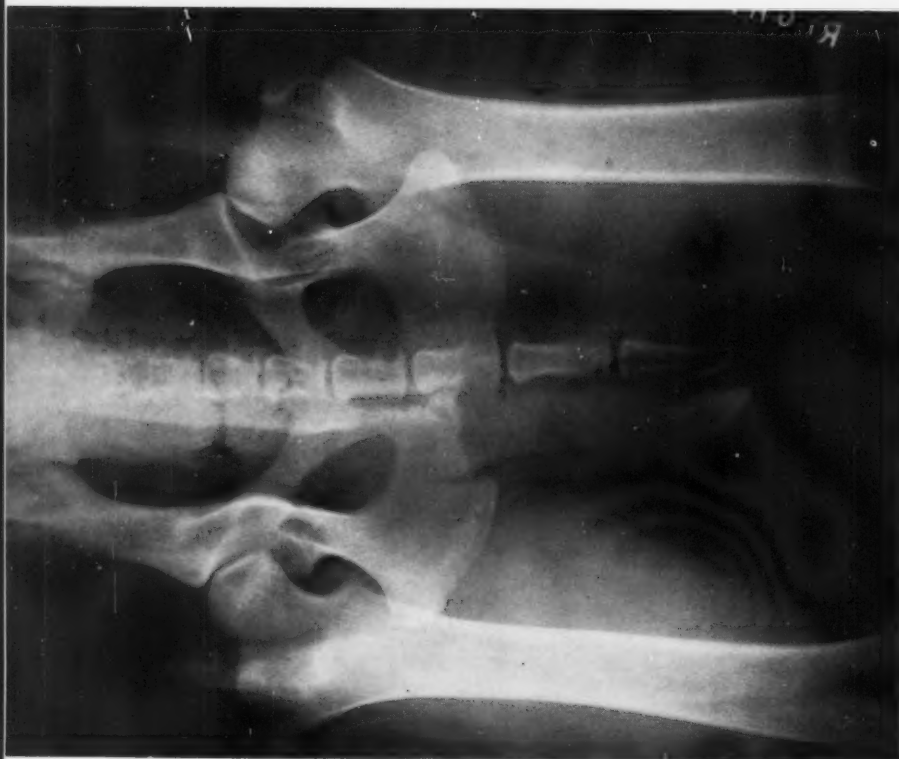


Fig. 11—Ventrordorsal radiograph of a German Shepherd Dog, 10 months old, weighing 57 lb. Position is acceptable and the hips are dysplastic. The remodeling changes of the acetabulums are marked, but changes in the femoral heads are not detectable at this time.

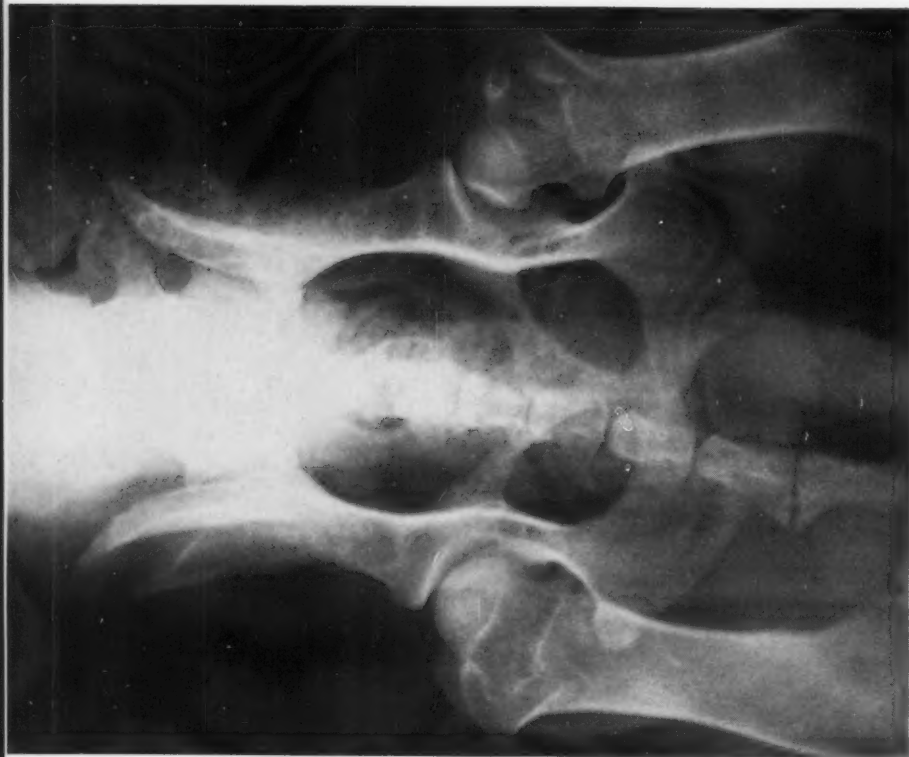


Fig. 12—Ventrordorsal radiograph of a male Bassett Hound, 1½ years old, with hip dysplasia. The acetabulums are large and shallow and there is evidence of moderate subluxation of the femoral heads. The right femoral head is (by careful calibration) smaller than the left.



Fig. 13—Ventrordorsal radiograph of a male German Shepherd Dog, 5 months old, with hip dysplasia. The acetabulums are large, shallow, and in the process of remodeling. Changes in the femoral heads are minimal at this time.



Fig. 14—Ventrordorsal radiograph of a female German Shepherd Dog, 9 months old, weighing 52 lb. Position is acceptable and the hips are dysplastic. Remodeling changes are evident in both the acetabulums and heads of the femurs. Beginning osteophytosis can be seen at the junction of the head and neck of both femurs.



Fig. 15—Ventrordorsal radiograph of a male Boxer, 2 years old, weighing 60 lb. Position is acceptable and the hips are classed as dysplastic. Remodeling of both acetabulums and femoral heads is extensive, with beginning osteoarthritis, shortening of femoral heads, and osteophytosis at the junctions of the femoral heads and necks and at the acetabular rims.

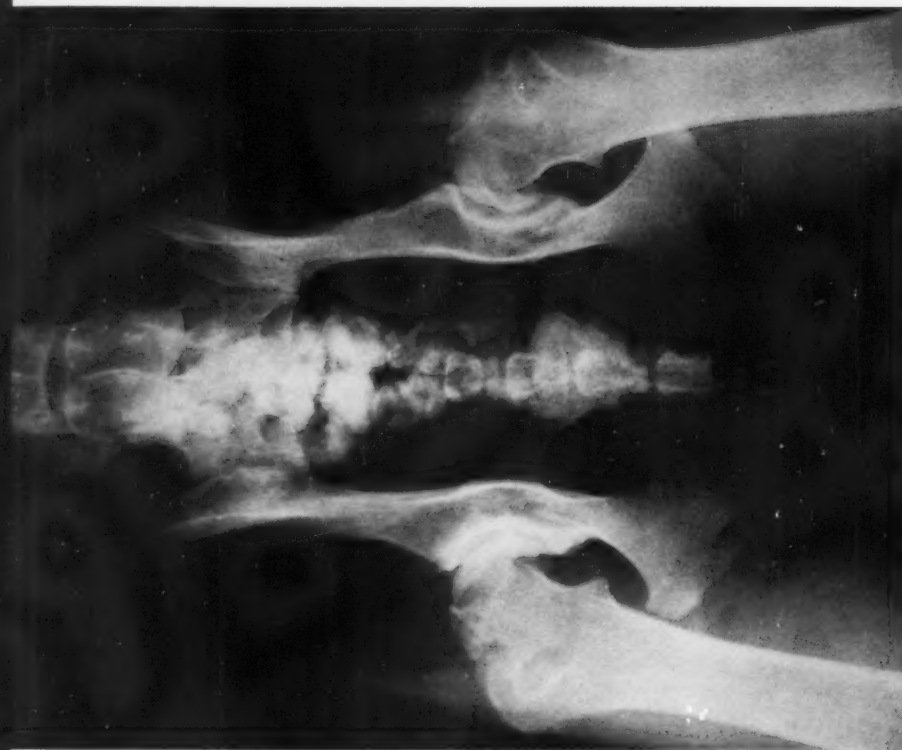


Fig. 16—Ventrordorsal radiograph of a female German Shepherd Dog, 4 years old. Position is acceptable and the hips are dysplastic, with extensive osteophytic filling of the acetabulums, flattening of the dorsal acetabular rims, sclerotic changes of all bone substance contiguous to the joints, shortening of the femoral heads, eburnation, and osteophytic thickening of the femoral necks.



Fig. 17—ventrodorsal radiograph of a female Bulldog, 8 months old. Position is acceptable and the hips are dysplastic. There is shallowness of the acetabulums, and the remodeling changes can be expected to become progressively more extensive.

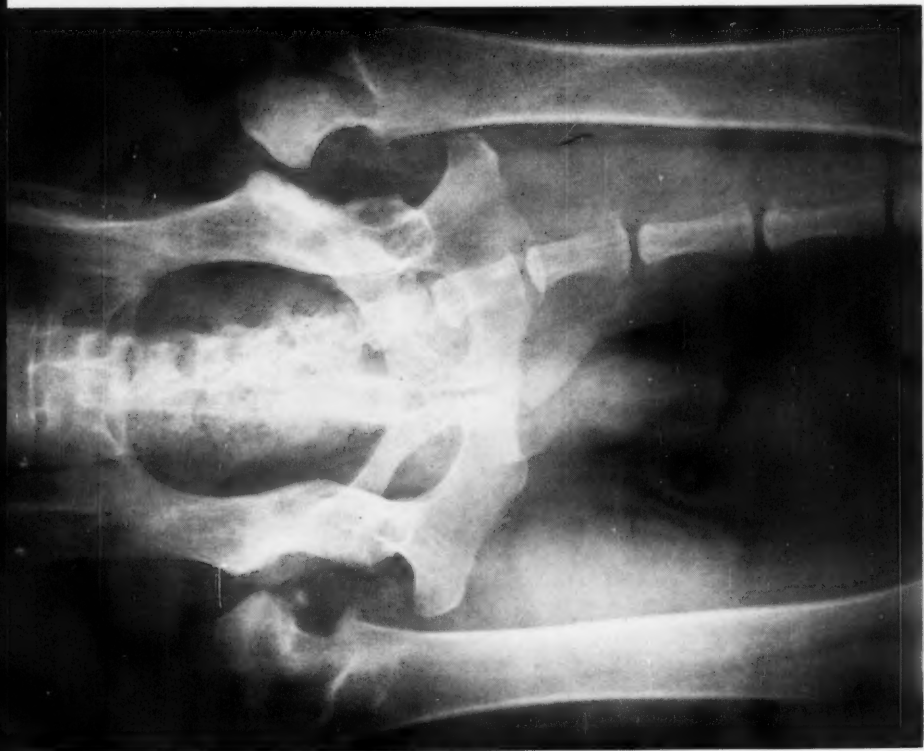


Fig. 18—Ventrordorsal radiograph of a male German Shepherd Dog, 10 months old, weighing 58 lb. Position is acceptable and the hips are dysplastic. The heads of the femurs are completely dislocated in a lateral and cranial direction. The acetabulums are filling with osteophytic material and the round ligaments have ruptured.

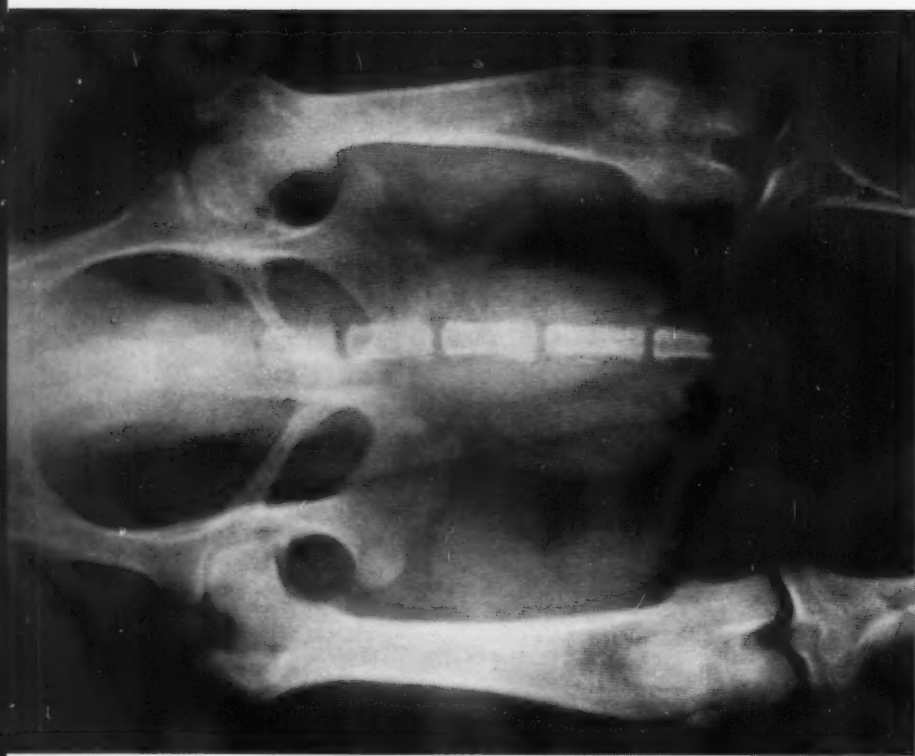


Fig. 19—Ventrordorsal radiograph of a male Pekingese, 11 months old, properly positioned. The lesion involving the left hip joint is known as either aseptic necrosis of the femoral head or osteochondrosis; it may be mistaken for hip dysplasia. This lesion is caused by disturbed circulation to the femoral head or to the femoral capital epiphyseal cartilage.



Fig. 20—Ventrordorsal radiograph of a female pug, 1 year old. Position is acceptable. The lesion involving the left hip joint is known as either aseptic necrosis of the femoral head or osteochondrosis; it may be mistaken for hip dysplasia. This lesion is caused by disturbed circulation to the femoral head or to the femoral capital epiphyseal cartilage. Osteophytosis is present at the junction of the head and neck of the femur.

Editorial

Convention Aftermath

The 98th Annual Meeting of the American Veterinary Medical Association held recently in Detroit is now history. "Hospitality" rooms sponsored by commercial firms were banned as they had been the preceding year in Denver, but adjacent to the exhibits, a "friendship" area with coffee and snacks available was provided as a partial substitute. According to preliminary estimates, total attendance, including wives and children, was down considerably from the previous year, indicating that Detroit was not as appealing to families as Denver. Cool weather along with new, air-conditioned Cobo Hall made the whole affair this year extremely comfortable.

Practitioner Elected

For the first time in 11 years, an active practitioner was elected to the office of president-elect. The practitioner, Dr. Dan J. Anderson, of Fort Worth, Texas, is unusually well-grounded in AVMA affairs, having served previously as chairman of the Executive Board and as a Board member (see Sept. 15 issue, p. 629). Since his current activity is mainly large animal practice, he supplements small animal practitioner, Jack O. Knowles (chairman of the Executive Board), and research administrator, Mark L. Morris (president), almost perfectly, making the new Board of Governors* a well-balanced combination.

Television Taped

Scientific sessions were characterized by presentations given by college faculty members, practitioners, military professionals, industrial and institutional research workers, governmental workers, and specialists in related nonveterinary areas. Closed-circuit educational television, sponsored by Pitman-Moore Co., was video-taped for the first time. Motion picture films of the taped

portion which dealt mainly with respiratory problems of small animals will be available in the near future.

Presidential Speeches

Retiring president E. E. Leasure reviewed the preceding year's activities, citing as significant events the revitalized public information program, the AVMA Women's Auxiliary fund-raising campaign (\$51,000 for research fellowships), broadened recruitment plans, and the proposed survey (Prospectus) to evaluate the profession (see p. 763).

Of particular interest was newly installed President Morris' acceptance speech in which he outlined a "Blueprint for Action." He called for increased emphasis on research, on educational expansion, and on recruitment of veterinary students; more action to remove oppressive zoning restrictions for hospitals; more legislative activity; increased dues; and a new headquarters for the AVMA (see p. 768).

House Actions

With remarkably few exceptions the House Advisory Committee, the seven house reference committees, and the policy-making House of Delegates concurred with the recommendations of the Executive Board. Principal items of controversy involved selection of the 1965 convention site (Portland, Ore.), allocation of funds for the career recruitment program, publication of a convention proceedings book, official relations with the National Association of Artificial Breeders, granting of funds to two constituent associations for participation in health fairs, reallocation of voting power of delegates, and election of president-elect by the House of Delegates.

Other matters pertaining to the profes-

*The AVMA Board of Governors consists of the president, president-elect, and chairman of the Board.

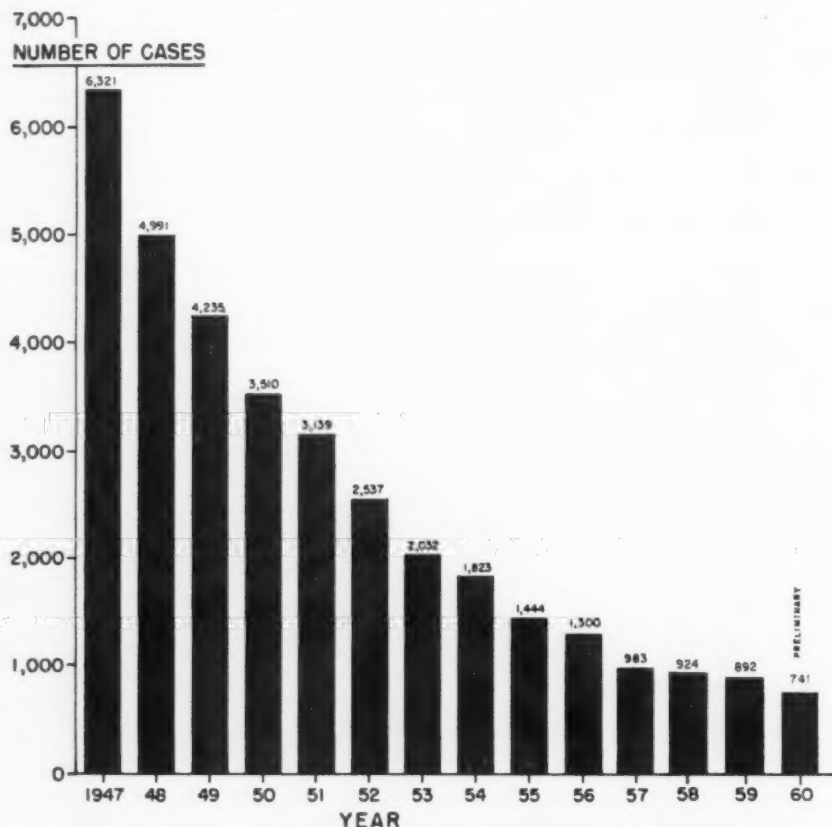
sion were agreed on with little dissent: review by USDA of fees for services rendered by practitioners in USDA disease eradication programs; support for the USDA animal inspection and quarantine program; restoration of office of Assistant Secretary of Defense (Health and Medical); development of a veterinary branch within ICA; opposition to certain bills pertaining to humane treatment of experimental animals; appointment of a chief professional officer for veterinary medical affairs in the Surgeon General's department; and commendations to Senator Humphrey for his

efforts to secure additional funds for veterinary educational facilities.

Full details of convention business proceedings will be published in December and distributed to all AVMA members.

Several proposed new additions to the central office staff included a full-time secretary to the Council on Education, an assistant to the director of public information, and a replacement Director of Scientific Activities. A number of new officers, committee members, council members, section officers, and advisory board members were elected (*see* pp. 829-832).—A.F.

Reported Cases of Brucellosis in Man — 1947-1960



—*Morbidity and Mortality Report*, Vol. 10, No. 18

The reported number of cases of brucellosis in man continued to decline in 1960 (741 cases) as it has for the past 14 years. The states having the highest incidence were Iowa, Illinois, Kansas, Virginia, California, South Dakota, Texas, and Nebraska. These 8 states reported 75% of the cases in the nation. Iowa with 307 cases reported 41%.

from the *Research Journal*

Nutritional Muscular Dystrophy in Lambs of Ewes Fed Selenium

Subcutaneous injections of aqueous sodium selenite, each containing 10 mg. of selenium, were given in each of the last three months of gestation and at lambing time to ewes maintained on a dystrophy-producing ration. No signs of toxicosis were observed. The incidence of muscular dystrophy in the lambs of these ewes was greatly reduced when compared with that in control lambs, although not entirely elim-

inated. Evidence suggested that in those affected lambs of selenium-treated ewes, the onset of the disease may have been delayed and its character made less severe.—[S. Young, W. W. Hawkins, Jr., and K. F. Swingle: *Nutritional Muscular Dystrophy in Lambs—Effect of Administering Selenium to Pregnant Ewes*. *Am. J. Vet. Res.*, 22, (May, 1961): 419-421.]

Nutritional Muscular Dystrophy in Lambs—Importance of Ewe's Diet

In two years of experimental trials, ewes were fed for various periods during gestation and early lactation on a dystrophy-producing hay. The incidence of muscular dystrophy in their lambs was recorded. Lambs remained unaffected when their dams received the hay in only the first four months of gestation. A moderate incidence of the disease occurred in lambs when their dams were fed the hay in the last two to three months of gestation. After feeding dystrophy-producing hay to ewes only in early

lactation, incidence of disease was as high as that resulting from feeding throughout gestation. Similarly, the incidence that resulted from the feeding of the hay throughout gestation was increased four- to sixfold when this ration was continued into the first three weeks of lactation.—[S. Young, W. W. Hawkins, Jr., and K. F. Swingle: *Nutritional Muscular Dystrophy in Lambs—Importance of the Ewe's Diet at Certain Stages of Gestation and Lactation*. *Am. J. Vet. Res.*, 22, (May, 1961): 412-415.]

Bephenium Hydroxynaphthoate as an Anthelmintic in Yearling Calves

Eight parasitized yearling Hereford heifers were used to study the anthelmintic efficacy of a commercial preparation containing 90% bephenium hydroxynaphthoate. Four of the calves were given the preparation at the rate of 250 mg. per kilogram of body weight. The remaining 4 calves served as untreated controls.

The efficacy of bephenium hydroxynaphthoate in this study was based on a comparison of the total number of worms recovered from the treated calves with that

recovered from the controls. On this basis, there was 85% reduction for *Ostertagia ostertagi*, 87% for *Trichostrongylus axei*, 100% for *Nematodirus helvetianus*, 99% for *Cooperia oncophora*, 100% for *Oesophagostomum radiatum*, and 99% for *Chabertia ovina*.—[A. M. Eisa and R. Rubin: *A Critical Evaluation of Bephenium Hydroxynaphthoate as an Anthelmintic in 8 Yearling Hereford Calves*. *Am. J. Vet. Res.*, 22, (July, 1961): 708-712.]

Study of Chicken Sarcoma (Strain 13) by Vent Exposure

Strain 13, a virus-induced chicken sarcoma, was applied by the vent-drop and the

vent-brush methods to induce resistance or immunity. Single exposure and repeated

exposures were made, after which the immunity of principals and controls was challenged by intramuscular injection. No tumors grew in the vent and no evidence was found to indicate that any resistance or immunity was produced against chicken sarcoma

(strain 13) by vent-drop or vent-brush exposure.—[E. L. Stubbs, F. G. Sperling, and A. M. Wallbank: *Study of Chicken Sarcoma (Strain 13) by Vent Exposure*. *Am. J. Vet. Res.*, 22, (July, 1961): 813-815.]

New Books

Chemicals in Your Food and in Farm Produce: Their Harmful Effects

The author is to be commended on the excellence of his presentation on the danger of poisons in our food supply and their deleterious effects on wildlife and insects.

Subjects dealt with include the cumulative long-range effects of use of emulsifiers, blenders, pesticides, insecticides, fluorides, antibiotics, hormones, and other agents in everyday foods; the relationship between food and disease; the part chemicals play in dental decay; chemicalization as a threat to longevity; the role of detergents as a health

menace; what can be done to protect ourselves from chemicals; and the need of an informed public and better and safer methods of producing our food.

There are ample references for the reader who wants to follow up on this fascinating subject.—[*Chemicals in Your Food and in Farm Produce: Their Harmful Effects*. By Franklin Bicknell, M.D. 192 pages; not illustrated. Emerson Books, Inc., New York, N.Y. Price \$2.95.]

Veterinary Medicine

This textbook is an adequate clinical manual for both veterinary students and practitioners dealing with diseases of large animals.

The title *Veterinary Medicine* is somewhat inappropriate for a textbook concerned only with the diseases of large animals; a restricted designation would be more fitting. The book is not written as a reference text on the pathology, physiology, or microbiology of diseases, but the selected references listed with each major topic discussed permit easy access to further information if it is desired. The consistent, con-

cise form used in the discussion of each topic is highly commendable.

There is justification for the inclusion of more of the rare exotic diseases than can be so readily transferred from one continent to another. Diseases of this sort are becoming more important each year and information regarding them should be available to the student even though little time is devoted to them in the classroom.—[*Veterinary Medicine; A Textbook*. By D. C. Blood and J. A. Henderson. 1,008 pages; not illustrated. Williams & Wilkins Co., Baltimore, Md. 1960. Price \$15.00.]—R. D. HATCH.

Wait for the New Grass

This novel is a fictionalized account of the trying years of patience and heartbreak spent eradicating foot-and-mouth disease in Mexico in the late 40's. It will not only be fascinating to any veterinarian who has lived through the experience, but will have appeal to many other readers as well.

The novel portrays the experiences of a young veterinarian from Ohio and his reaction to the unexpected bitterness and hostility of people fearful of losing their most important means of subsistence—cattle. Intertwined with the death and violence of fighting the disease is a tender love affair

with the daughter of an Indian rancher. The American, however, meets her understanding and love with vacillating hypocrisy as he visualizes returning to Ohio with a back-country Indian bride who speaks no English.

It tells the story of Mexicans and Americans as they worked together and of the dedication and understanding as well as the unthinking bureaucracy that was so prevalent. However, as the director of the disease eradication program remarks, "the Commission, in spite of its inefficiency, is fortunately a little more efficient than the virus."

Plants Poisonous to Livestock

This book, which enumerates plants poisonous to livestock, directs the attention of the reader to the distinguishing features and occurrence of the plant, its toxic principle(s), and the occurrence, signs, lesions, and treatment of poisoning. It contains much useful information in a concise form especially helpful to the clinician. Illustrations are in the form of drawings and are concerned chiefly with the distinguishing features of the plants and their distribution in the United States.

Although it contains much useful information, minor errors are numerous. These include errors in spelling and in number, and repetitious expressions such as "colic and abdominal pain" and "necropsy examination." Ambiguity is occasionally encountered, such as "Fifty grams of the plant per hundredweight are sufficient to induce fatal poisoning . . ." without specifying whether "hundredweight" refers to feed or the an-

The author vividly describes the dry, hot coastal plains and the rugged mountain areas where the disease was found. The smell of the antiseptic of the quarantine stations can almost be found within the pages.

This is an extremely well-written book depicting one of the vital pages of veterinary history and is recommended reading for every veterinarian and his wife.—[Wait for the *New Grass*. By Henry Birne. 401 pages. St. Martin's Press, New York, N.Y. 1961. Price \$4.95.]—J. D. LANE.

imal's body weight. A repeated recommendation to sell affected animals seems to involve some ethical considerations; perhaps it should be amplified to provide for selling such animals only for slaughter where veterinary inspection is carried out. Perhaps the most serious deficiency is the lack of an index and of page numbers, which would seem to seriously handicap the reader in his search for information.

Relatives space given to commendation and to criticism above are not meant to reflect the book's relative merit or lack of merit. It is hoped that the authors will eliminate its deficiencies at an early date, since it should thus become a very useful handbook.—[*Plants Poisonous to Livestock*. By Lloyd C. Hulbert and Frederick W. Oehme. Multolith; illustrated. Kansas State University, Manhattan. 1961. Price \$2.00]—C. C. MORRILL.

Veterinary Clinical Parasitology

This is the third edition of the well-known technical manual prepared by Benbrook and Sloss. The senior author was one of the first to originate the use of photomicrographs of parasites in the diagnosis of clinical parasitism. His report, published in 1925, clearly demonstrated the usefulness of photomicrographs of parasite ova as an aid in the clinical diagnosis of internal parasites of domestic animals.

This revised edition, illustrated with 290 original photomicrographs, gross photographs, and drawings, is divided into four

sections: (1) Fecal Examination in the Diagnosis of Parasitism, (2) Laboratory Identification of Parasites of the Blood, (3) Identification of Mites of the Skin and the Internal Organs, and (4) Diagnosis of Louse Infestations. The second section is an entirely new addition on the protozoa, nematodes, and mites found in the blood. Along with a description of blood parasites, are photomicrographs of the various forms in the blood. At the end of the manual are 25 pages of references, for further study, listed under the four sections.

The many useful techniques described and the numerous illustrations are a great aid in identifying parasites of domestic animals. The photomicrographs and drawings are grouped according to host animals for easier reference by the diagnostician. This manual is a useful reference for practitioners, teach-

ers, students, and all others who are interested in an accurate diagnosis of parasitism. —[*Veterinary Clinical Parasitology*. By Edward A. Benbrook and Margaret W. Sloss. 3rd ed. 240 pages; illustrated. Iowa State University Press, Ames, Iowa. 1961. Price \$6.50.]—F. R. Koutz.

Books Received But Not Reviewed

AIDE-MEMOIRE D'OSTEOLOGIE COMPAREE DES ANIMAUX DOMESTIQUES (Manual of Comparative Osteology of Domestic Animals). 2nd ed. By A. Richir. 105 pages; illustrated. Vigot Frères, Éditeurs, Paris. 1961. Price not given.

ANATOMIE UND PHYSIOLOGIE DER RINDERMILCHDRUSE (Anatomy and Physiology of the Bovine Udder). By H. Ziegler and W. Mosimann. 144 pages; illustrated. Paul Parey Verlag, Lindenstr. 44-47, Berlin SW 61. 1960. Price \$5.40.

BEITRÄGE ZUR PHYLOGENESE DER ENTZÜNDUNG DER WIRBELTIERE (Contributions to the Phylogenesis of Phlegmasia of Vertebrates). By Johannes Dobberstein. 44 pages; illustrated; paper bound. Akademie-Verlag, Leipziger Str. 3-4, Berlin W 1. 1960. Price \$1.80.

COBALT DEFICIENCY IN SOILS AND FORAGES. Prepared by U.S. Plant, Soil, and Nutrition Laboratory, ARS, U.S. Department of Agriculture. 5 pages. 1961. Available from: Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price 5 cents.

COBALT IN ANIMAL FEEDING. By Glenn Fuller and Vernon W. McAlpine. 24 pages; illustrated. 1961. Cobalt Information Center, c/o Battelle Memorial Institute, 505 King Ave., Columbus 1, Ohio. Available without charge.

DIE NARKOSE DER TIERE TIEL I: LOKALAN-ASTHESIE, TIEL II: ALLGEMEINE NARKOSE (The Narcosis of Animals. Part I: Local Anesthesia; Part II: General Anesthesia). By M. Westhues and R. Fritsch. 192 pages; illustrated. Paul Parey Verlag, Lindenstr. 44-47, Berlin SW 61. Part I publ. in 1960; Part II in Winter 1960/61. Price of Part I: \$6.45; price of Part II not indicated.

DIE TOLLWUT (Rabies). By Milan Nikolsch. 40 pages; illustrated. Gustav Fischer

Verlag, Staffenbergstr. 36, Stuttgart S. 1961. Price \$1.45.

LA SOURIS DE LABORATOIRE ET SON ÉLEVAGE (The Laboratory Mouse and Its Breeding). 2nd ed. By Michel Broustail. 70 pages; illustrated. Vigot Frères, Éditeurs, Paris. 1961. Price not given.

LEHRBUCH DER ANATOMIE DER HAUSTIERE —TIEL 2: EINGEWEIDE (Textbook of the Anatomy of Domestic Animals—Part II: Intestines). Edited by R. Nickel, A. Schummer, and E. Seiferle. 428 pages; illustrated. Paul Parey Verlag, Lindenstr. 44-47, Berlin SW 61. 1959. Price \$24.50.

LES MALADIES VERMINEUSES DES ANIMAUX DOMESTIQUES ET LEURS INCIDENCES SUR LA PATHOLOGIE HUMAINE. Vol. I: MALADIES DUES AUX NEMATHELMINTHES (Parasitic Diseases of Domestic Animals and Their Bearing on Human Pathology. Vol. I: Disease Caused by Nematheilmiths). By Jacques Euzéby. 473 pages; illustrated. Vigot Frères, Éditeurs, 23, rue de l'École-de-Médecine, Paris-6, 1961. Price not given.

LIVESTOCK HEALTH ENCYCLOPEDIA. By Rudolph Seiden. 2nd ed. 628 pages, illustrated. Springer Publishing Co., Inc., New York. Price \$9.50.

PATHOLOGISCHE ANATOMIE UND PATHOGENESE DER SPONTANEN TUBERKULOSE DER TIERE (Pathological Anatomy and Pathogenesis of Spontaneous Tuberculosis of Animals). By George Pallaske. 152 pages; illustrated. Gustav Fischer Verlag, Staffenbergstr. 36, Stuttgart S. 1961. Price \$7.00.

TIERGEBURTSHILFE (Animal Obstetrics). By J. Richter and R. Götz. 2nd ed., completely revised by G. Rosenberger and H. Tillmann. 924 pages; illustrated. Paul Parey Verlag, Lindenstr. 44-47, Berlin SW 61. 1959. Price \$44.50.



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References: 1. Vigue, R. F., et al.: J. Am. Vet. M. Ass. 134:308 (Apr. 1) 1959.

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WHAT IS YOUR *Diagnosis?*

Make your diagnosis from the picture below—then turn the page ►



Fig. 1—Ventrodorsal view of the pelvis and hindlegs of the lame dog.

History.—A male Wire-Haired Fox Terrier, 4 years old, was lame in the right hindleg for at least a year. During the last several weeks, the muscles of the lame leg had partially atrophied and the range of motion of the femur at the hip joint had become somewhat restricted. There was no knowledge of previous injury. Radiographs of the hindlegs and pelvis were taken (Fig. 1).

Here Is the Diagnosis

(Continued from preceding page)

Diagnosis.—Osteoarthritis accompanied by remodeling changes of the head and neck of the right femur. Such changes usually follow mild necrosis of the femoral head, osteochondrosis of the caputular epiphyseal cartilage of the femur, or possibly traumatic injury to the area.

Comment.—In certain breeds, particularly the Pug, Pekingese, Wire-Haired Fox Terrier, and Miniature Poodle, disturbed circulation to the femoral head and neck occurs frequently. It may be unilateral or

ondary osteoarthritis, osteophytosis (Fig. 2), and fibrosis of the capsule (Fig. 3) became pronounced.

This dog was euthanatized because of its disability. Upon examination of the gross and histologic sections of the joint (Fig. 3), the affected capsule was 3 to 4 mm. thick (1 mm. is normal). There were also active osteophytoses at the junction of the femoral head and neck (Fig. 2). Movement of the head of the femur in the acetabulum was restricted to a range of 45 degrees (180 degrees is normal after the muscles

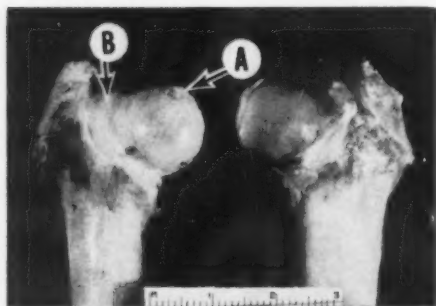


Fig. 2—Photograph of the femurs. The femur on the left side is affected by remodeling of the head (A) and osteophytosis at the junction of the head and neck (B). The femur on the right is normal.

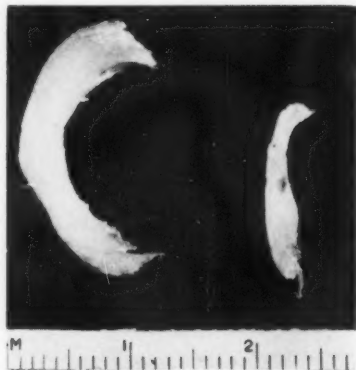


Fig. 3—Cross section of the affected capsule (left) and the normal capsule (right).

bilateral and the changes are easily mistaken for hip dysplasia. The condition usually occurs when the dog is 4 to 8 months old and prior to the time of ossification of the epiphyseal cartilage.

In man, attempts are made to distinguish between necrosis of the femoral head and osteochondrosis of the epiphyseal cartilage. Studies of these two conditions in dogs are limited, and with our present knowledge it is difficult to distinguish between the two diseases.

In this case, it was assumed that the initial disturbance was mild, occurred when the dog was less than 1 year old, and that the defect went unnoticed until sec-

are dissected away). The round ligament had completely degenerated. There was eburnation of the articular cartilage on the dorsal aspect of the affected head. The bone trabeculae under the cartilage were greatly increased in size and number, and remodeling was so extensive that it was impossible to determine the true nature of the original defect.

This report was contributed by Harold Melman, D.V.M., Washington, D.C., and was prepared with the assistance of Wayne H. Riser, D.V.M., M.S., Kensington, Md.

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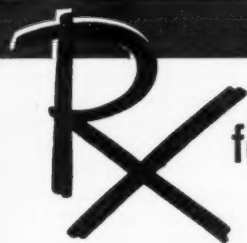
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Public **R**elations

How AVMA Publicized the 98th Annual Meeting

Conventions are, in many respects, public relations events. While the scientific sessions of an AVMA convention are primarily designed to bring veterinarians up to date on the latest scientific developments, they also spotlight the profession's competence in serving the needs of the public.

Likewise, while the business sessions are primarily designed to shape and direct the profession's activities and policies, they also portray to the public the profession's alertness to questions concerning the common good.

Convention publicity—translating convention activities into a language understandable to the public and disseminating the information among opinion leaders and communications media—is the responsibility of the AVMA's director of public information. It is a year-round responsibility, but at no other time is it more important, and more consequential, than at convention time. At convention time, the entire profession is "on the spot," and how it behaves, how it performs, may lastingly determine public opinion about the profession.

Here is a brief account of how the AVMA discharged its obligation to publicize the 98th annual session.

On June 6, a three-page summary of convention activities was sent to all veterinary publications. This was in essence a membership service provided to inform veterinarians about the scope and content of the convention through their state, regional, and local journals and newsletters.

Weeks before this release was mailed, work had already started to compile material for a comprehensive Press Kit designed to assist media representatives—press, radio, and television—in covering the 98th annual meeting.

The Press Kit, the cover of which featured the Association's seal and prominently displayed the letters "AVMA," consisted of:

- ✦ A program digest for press, radio, and television, highlighting those parts of the scientific and business sessions which seemed to be of greatest interest to the general public.
- ✦ Five releases dealing with scientific topics of interest to the general public and to other health professions, such as veterinary medical education, foreign animal diseases, training of guide dogs, and diseases of laboratory animals.
- ✦ A short biography and photo of Dr. Mark L. Morris, president of the AVMA.
- ✦ A list of milestones in American veterinary medical history.
- ✦ Background information on structure and function of the AVMA.
- ✦ A concise description of the dimensions of veterinary medicine in the United States.

The latter piece of material, replacing the old Veterinary Fact Sheet, described the education and activities of veterinarians in fields such as general practice, agriculture, pet health, public health, meat inspection, research, Armed Forces, private industry, teaching, and the Food and Drug Administration.

Altogether, the Press Kit contained 34 typewritten pages of information about veterinary medicine and the convention.

On July 1, 1,200 copies of the Kit were distributed among major metropolitan newspapers, wire services, farm and dairy publications, livestock publications, health and science publications, national consumer magazines, business and trade publications, science writers, news services, feature syndicates, pet magazines, veterinary publications, and among individuals and organizations having requested convention material.

A few days before the Press Kit was mailed, a specially prepared summary of convention activities was sent to all com-

(Continued on page 822)

dependable!

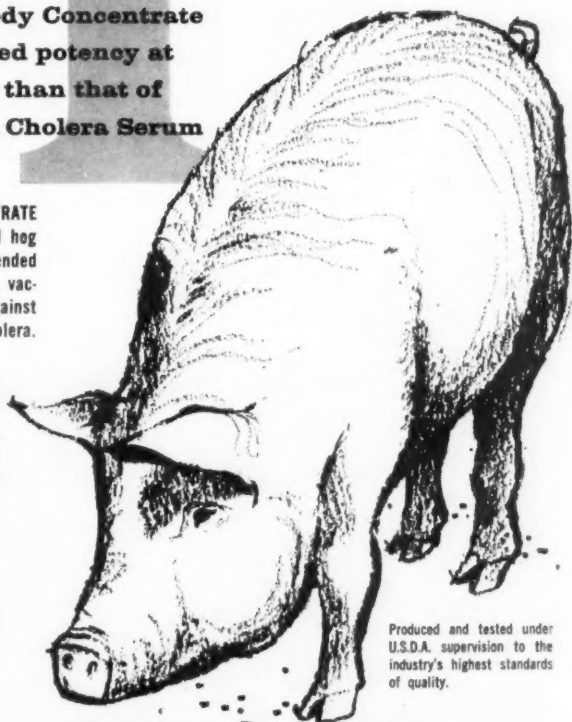
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PR Page—continued

munications media in the greater Detroit area.

To serve the vast market of "electronic journalism," the material in the Press Kit was reduced to eight one-minute spot announcements which were distributed among major radio and television stations throughout the country. Enclosed with the spot announcements was a copy of "Dimensions of Veterinary Medicine" to serve broadcasters as a future reference sheet on the profession.

A special effort was made to publicize the five veterinarians who were to receive awards at the Opening Session. Individual releases describing the awards and giving biographical information on the winners, as well as their award-winning contributions to the profession, were prepared and sent with a photograph to the award winners' home-town newspapers and radio and television stations.

Additionally, a general release dealing with all five award winners and their work was sent to all veterinary publications and all wire services.

Individual releases were also prepared on all AVMA delegates, and sent to their home-town media.

To assure maximum coverage of the convention in Detroit, the director of public information spent the days from July 17 through 19 in Detroit, calling in person on newspaper editors, radio and television program directors, and directors of special radio and television shows.

Of course, nobody can foresee the results of these preparatory efforts at the time this account is being written. At publication time, newspaper clippings and reports on radio and television interviews will have indicated in some measure to what extent the public has been informed about the 98th annual meeting. But probably more important than immediate and tangible results will be the fact that the AVMA has made its existence, its services, and its availability known to those whose job it is to inform the public.

H. R. Kuehn

Director, Public Information

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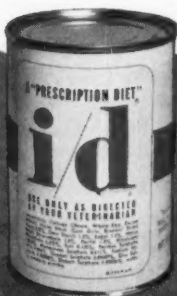
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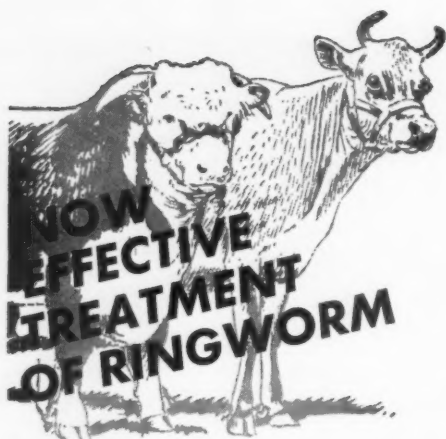
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Coming Meetings

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October, 1961

New England Veterinary Medical Association. Annual meeting. Poland Springs Hotel, Poland Springs, Maine, Oct. 1-4, 1961. Dr. C. Lawrence Blakely, 180 Longwood Ave., Boston, Mass., secretary.

New York State Veterinary Medical Society. 70th annual meeting. Saranac Inn, New York, Oct. 3-7, 1961. Dr. C. D. Ebertz, 84 Grant Ave., Auburn, N.Y., program chairman.

Purdue University. 49th annual conference for veterinarians. Purdue University, School of Veterinary Science and Medicine, Lafayette, Ind., Oct. 5-7, 1961. Dr. Erskine V. Morse, Purdue University, School of Veterinary Science and Medicine, Lafayette, Ind., dean.

Symposium on Recent Developments in Research Methods and Instrumentation. 11th annual instrument symposium and research equipment exhibit. National Institutes of Health, Bethesda 14, Md., Oct. 9-12, 1961. Mr. James B. Davis, National Institutes of Health, Bethesda 14, Md., executive secretary.

Interstate Veterinary Medical Association. 47th annual meeting. Sheraton-Martin Hotel, Sioux City, Iowa, Oct. 12-13, 1961. Dr. D. W. Rubel, 3209 Thirty-Eighth St., Sioux City, Iowa, secretary.

Eastern Iowa Veterinary Association. Annual meeting. Sheraton Montrose Hotel, Cedar Rapids, Iowa, Oct. 12-13, 1961. Dr. William R. Goodwin, Newhall, Iowa, secretary.

University of Georgia. Sixteenth Annual Short Course for Veterinarians. Georgia Coastal Plain Experiment Station, Tifton, Ga., Oct. 14-15, 1961. Dr. James G. Miller, Animal Disease Department, University of Georgia, College of Agriculture, head.

University of Illinois. 42nd Annual Conference and Extension Short Course for Veterinarians. College of Veterinary Medicine, University of Illinois, Urbana, Ill., Oct. 19-20, 1961. Dr. L. E. St. Clair, Department of Veterinary Anatomy and Histology, conference chairman.

Illinois Veterinary Medical Conference and Short Course. University of Illinois, Urbana, Oct. 19-20, 1961. Dean C. A. Brandy, College of Veterinary Medicine, University of Illinois, Urbana, Ill.

Gaines Symposium. University of Illinois, Urbana, Ill., Oct. 20, 1961. Mr. Harry Miller, Gaines Dog Research Center, 250 Park Ave., New York 17, N.Y., director of the Dog Research Center.

Midwest Feed Manufacturers' Association. Centennial Nutrition conference. Kansas City, Mo., Oct. 21-25, 1961. Fennell-Gibson Public Relations, 2201 Grand Ave., Kansas City, Mo.

Southern Veterinary Medical Association. Annual meeting. Thomas Jefferson Hotel, Birmingham, Ala., Oct. 22-25, 1961. Dr. A. A. Husman, Box 91, Raleigh, N.C., secretary.

Florida State Veterinary Medical Association. 32nd annual convention. Deauville Hotel, Miami Beach, Fla., Oct. 22-24, 1961. Dr. M. W. Emmel, P.O. Box 340, Gainesville, Fla., executive secretary.

California Veterinary Medical Association. Annual meeting. Long Beach, Calif., Oct. 23-25, 1961. Mr. Kenneth Humphreys, 3004 Sixteenth St., Rooms 301-303, San Francisco 3, Calif., executive secretary.

Missouri, University of. 37th annual veterinary conference. Columbia, Mo., Oct. 30-31, 1961. Dr. Cecil Elder, Department of Veterinary Pathology, School of Veterinary Medicine, University of Missouri, Columbia, Mo., chairman.

United States Livestock Sanitary Association. Curtis Hotel, Minneapolis, Minn., Oct. 30-Nov. 3, 1961. Dr. R. Hendershott, 33 Oak Lane, Trenton, N.J., secretary.

Veterinary Laboratory Diagnosticians. 4th annual meeting. Curtis Hotel, Minneapolis, Minn., Oct. 30-31, 1961. Dr. E. Pope, 4922 Holiday Dr., Madison 5, Wis., secretary.

National Assembly Chief Livestock Sanitary Officials. Curtis Hotel, Minneapolis, Minn., Oct. 30-31, 1961. Dr. M. N. Riemenschneider, 122 State Capitol, Oklahoma City, Okla., secretary.

National Association of Federal Veterinarians. Annual meeting. Curtis Hotel, Minneapolis, Minn., Oct. 31, 1961. Dr. F. L. Herchenroeder, Box 3085, Parkfairfax Station, Alexandria, Va., secretary.

November, 1961

Mississippi Valley Veterinary Medical Association. Hotel Pere Marquette, Peoria, Ill., Nov. 1-2, 1961. Dr. R. C. Williams, 3721 Fifth Ave., Moline, Ill., secretary.

Michigan Nucleonic Society. Detroit, Mich., Nov. 10, 1961. Dr. L. E. Preuss, Department of Physics, Edsel B. Ford Institute for Medical Research, Henry Ford Hospital, Detroit 2, Mich., chairman.

American Public Health Association. 89th annual meeting. Cobo Hall, Detroit, Mich., Nov. 13-17, 1961. Dr. Berwyn F. Mattison, American Public Health Association, 1790 Broadway, New York 19, N.Y., executive director.

December, 1961

American Association of Equine Practitioners. 8th annual meeting. Hotel Texas, Fort Worth, Texas, Dec. 3-5, 1961. AAEP, 531 Guaranty Bank Bldg., Denver 2, Colo.

Kentucky Veterinary Medical Association. Annual meeting. Kentucky Hotel, Louisville, Ky., Dec. 4-5, 1961. Dr. L. S. Shirrell, 545 E. Main St., Frankfort, Ky., secretary.

January, 1962

Michigan State University. Thirty-ninth annual Postgraduate Conference for Veterinarians. College of Veterinary Medicine, Michigan State University, East Lansing, Mich., Jan. 17-19, 1962. Dr. W. W. Armistead, dean.

Oklahoma Veterinary Medical Association. Annual meeting. Mayo Hotel, Tulsa, Okla., Jan. 21-23, 1962. Dr. W. D. Speer, 538 S. Madison, Tulsa, Okla., secretary.

Minnesota Veterinary Medical Association. Annual meeting. Hotel St. Paul, St. Paul, Minn., Jan. 22-24, 1962. Dr. B. S. Pomeroy, 1443 Raymond Ave., St. Paul 8, Minn., secretary.

Intermountain Veterinary Medical Association. Annual meeting. Newhouse Hotel, Salt Lake City, Utah, Jan. 24-27, 1962. Dr. Bert Reinow, Box 277, Pinedale, Wyo., president.

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Kansas Veterinary Medical Association. Annual meeting. Broadview Hotel, Wichita, Kan., Jan. 29-31, 1962. Dr. M. W. Osburn, 1525 Humboldt, Manhattan, Kan., executive secretary.

August, 1962

American Veterinary Medical Association. Ninety-ninth Annual Meeting. Fontainebleau Hotel, Miami Beach, Fla., Aug. 12-16, 1962. Dr. H. E. Kingman, Jr., 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Foreign Meetings

Twelfth World's Poultry Congress. Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia, Aug. 13-18, 1962. Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Calif.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

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History of the AVMA

In his presidential address at the 1919 meeting in New Orleans, V. A. Moore spoke of the existence among veterinarians
1919 "... of a false conception of professional authority

Numerous appeals have come to defend the rights of veterinarians . . . [but] I do not find that practitioners are vested with it [authority] when their professional function is considered alone In the true sense, veterinarians are the servants of animal owners. According to the tenets of our ethics, they can serve only when requested to do so and, by the property rights, they have no other alternative.

"There is a delicacy in this situation that members sometimes overlook. The sense of being a servant is often humiliating, but never so when considered in a true, professional spirit I am bold enough . . . to believe that the time will come soon when they [veterinarians] will command sufficiently the confidence of men in their occupations to enable them to perform fully the mission of their calling. It is this principle, rather than vested authority, that gives them the dignity of professional men."

Two general sessions at the meeting were devoted to the Army Veterinary Service, one to diseases in the South, and one session on sanitary science to infectious equine anemia. C. J. Marshall reported that a Pennsylvania farm had 31 deaths from malignant catarrhal fever, and said that although this disease was thought to be rare, it might be more prevalent than supposed. "A diagnosis in this case would have been overlooked if the disease had occurred in a small herd with but few deaths."

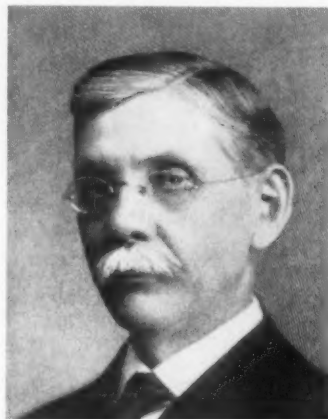
W. H. Hoskins remarked in passing, "When the Volstead prohibition bill reached conference it was discovered that a provision permitting the veterinarian to prescribe liquors under like conditions as the physician had been omitted . . . [but] we were assured . . . the omission was not intentional." Later, in response to an inquiry by N. S. Mayo, the Bureau of Internal Revenue ruled, "... veterinarians may not prescribe intoxicating liquors for internal use for their animal patients [This] is limited to duly qualified physicians for persons only. Not to exceed 6 quarts of alcohol may therefore be obtained by any veterinarian during any calendar year." A dryly humorous note in the JOURNAL read: "The announcement that the law does not permit

the prescribing of alcoholic liquors for animals will be sad news to many stable attendants."

C. A. Cary was elected president; N. S. Mayo was re-elected secretary, and, as was to be the case until 1943, M. Jacob was re-elected treasurer.

★ ★ ★

VERANUS ALVA MOORE was born in Houndsfield, N. Y., April 13, 1859. He received his B.S. degree from Cornell (1887), his M.D. from George Washington University (1890), an honorary veterinary degree from the University of Pennsylvania (1911), and a D.Sc.

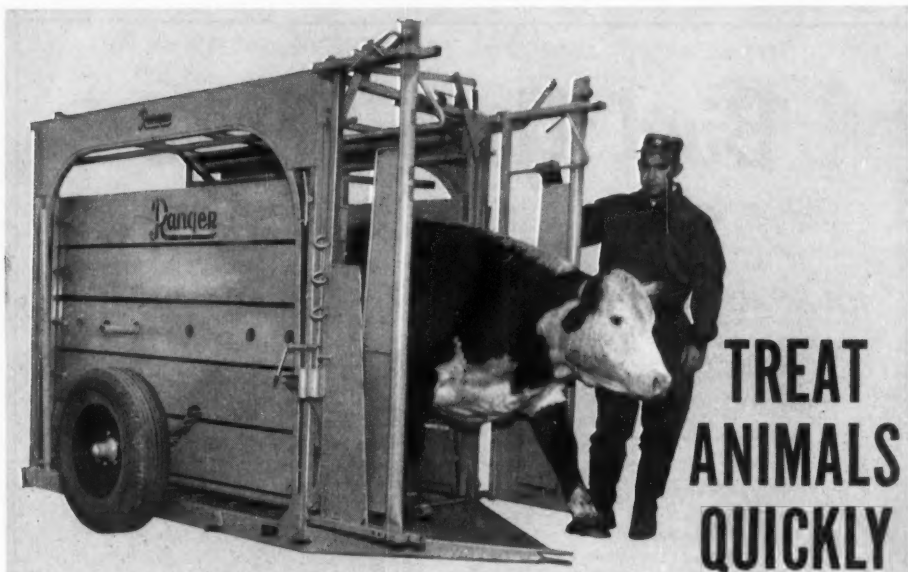


Dr. Veranus A. Moore

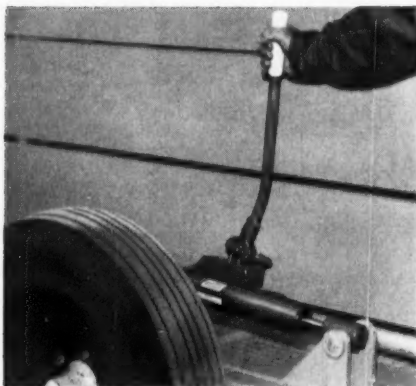
from Syracuse University (1919). From 1890-1896, he was with the BAI, succeeding Theobald Smith as chief of the Pathological Division in 1895. In 1896, he became a member of the first faculty in veterinary medicine at Cornell, as professor of Veterinary Pathology, Bacteriology, and Meat Inspection. In 1908, he succeeded James Law as dean, and remained in both capacities until his retirement in 1929.

Dr. Moore joined the AVMA in 1901, was vice-president four times, the first chairman of the Executive Board (1916), and president in 1918. An authority on tuberculosis, he served on the International Tuberculosis Commission; he was co-author with W. A. Hagan of a textbook, *General and Pathogenic Bacteriology and Immunity* (1925). One of his two sons, Ervin V. Moore, became a veterinarian (Cornell, 1917).

Dr. Moore died at Ithaca, N.Y., Feb. 11, 1931.



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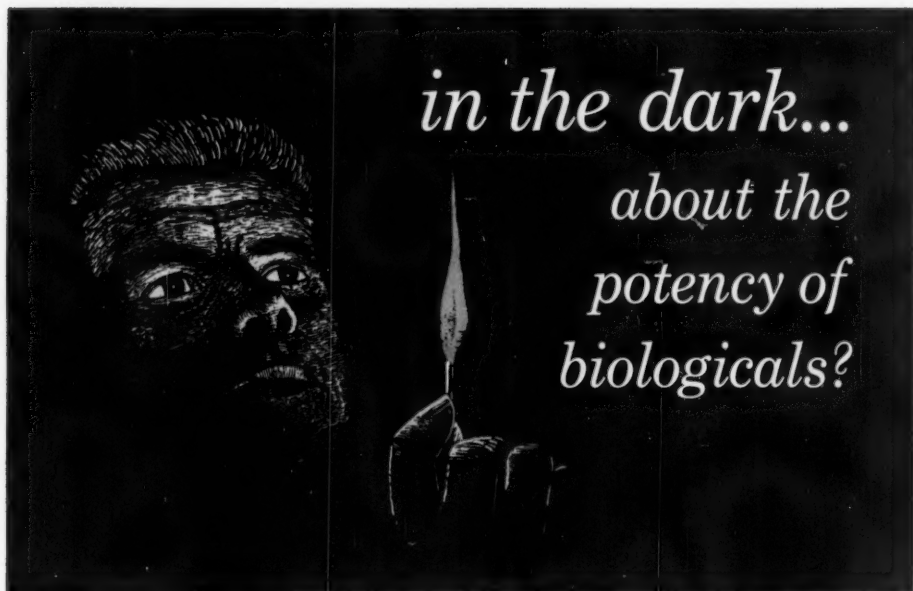
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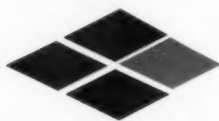
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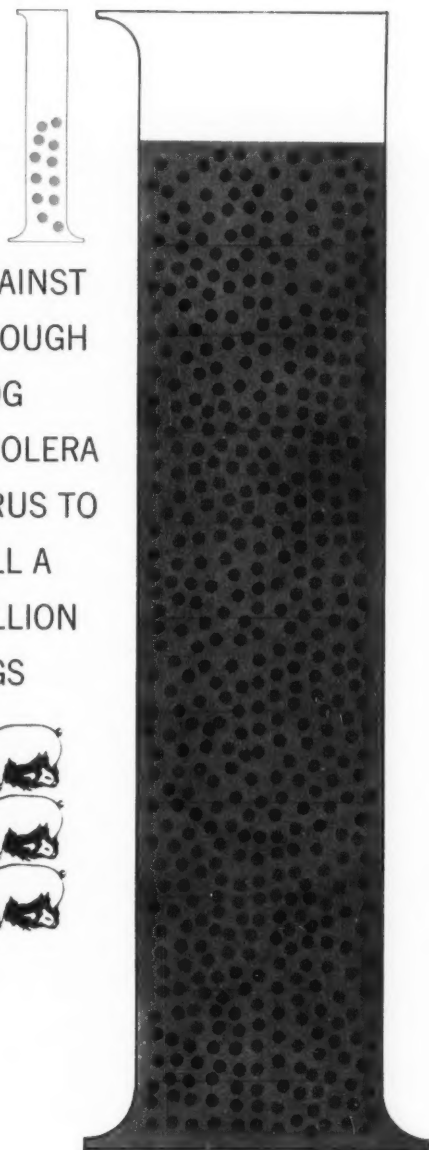
Wanted—man or woman with experience to take complete charge of trimming, bathing and grooming department at new Friendship Animal Hospital, 4105 Brandywine St., N.W., Washington 16, D. C.

For sale—metal unit of 5 cages, small dog size. Good condition. Contact Dr. A. M. Collins, Cicero Animal Clinic, Cicero, Ill.; Olympia 2-1040.

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THESE ARE THE FACTS: "In one instance, 12 pigs, averaging 200 lb. each were inoculated intravenously with 5 cc. per lb. body weight of virulent virus (1,000 cc.) 78 to 91 days following vaccination. All of these pigs withstood this challenge which approximated one billion lethal doses of virulent virus."¹

Tests show that SWIVAX Meets All These Criteria for a Theoretically Ideal Hog Cholera Vaccine:¹

Antigenic Properties

Produces rapid immunity, a high degree of immunity, and long-lasting immunity, even under conditions of naturally occurring stress. A single dose is effective when used with or without hog cholera anti-serum.

Safety Properties

Causes no clinical signs of disease, no histopathologic signs of disease, no hematologic signs of disease. Does not produce carriers or spread from vaccinated to susceptible animals. Does not revert to virulence even when deliberately "back-passaged".

The high-rabbit-passage vaccine combining the immunogenic properties of living virus and the safety of killed virus—

AGAINST
ENOUGH
HOG
CHOLERA
VIRUS TO
KILL A
BILLION
PIGS



SWIVAX[®]

HOG-CHOLERA VACCINE

* modified live virus rabbit origin, vacuum dried

1. Newberne, J. W., et al.: Recent Studies on the Properties of a Nonvirulent Living Hog Cholera Vaccine, 62nd Annual Proceedings, U. S. Livestock Sanitary Association, 1958, pages 278-289.

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When distemper virus is grown in the Jen-Sal canine kidney cell system and becomes **Cytogen** virus, its ability to invade the dog is also enhanced. Susceptible test animals successfully withstood challenge with virulent virus as early as four days after vaccination with **Cytogen**³.

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Cytogen contains an exclusive stabilizing agent. With this stabilizer **Cytogen** virus has successfully protected dogs from virulent virus challenge after being artificially aged for a period equivalent to fourteen months of storage at room temperature⁴. For even greater superiority **Cytogen** is held well below freezing from the time it is produced until you receive it.

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Clinical and Research References:

1. Sinha, S. K., et al. Studies on Canine Distemper Immunization with a Tissue Culture Vaccine. *Vet. Med.*, Vol. 55, No. 4, April 1960.
2. Burgher, J. A., et al. The Immune Response of Dogs to Distemper. *Cornell Vet.*, Vol. 48, No. 2, 1958.
3. Paton, I. M., et al. Progress in Distemper Immunization. *Jen-Sal Small Animal Topics*, August 1960.
4. Dept. of Biological Research, Jensen-Salsbery Laboratories. Unpublished Research Data.

